ISSN 2313–1799

SCOPUS

Journal of East African Ornithology

A publication of the
Bird Committee of the
East Africa Natural History Society

Edited by
James Bradley

Volume 41(2), July 2021

BirdLife INTERNATIONAL

NatureKenya
The East Africa Natural History Society

Scopus: Journal of East African Ornithology
41(2), July 2021

Short communications

Scopus 41(2): 1–10, July 2021

Status and size of Pied Avocet *Recurvirostra avosetta* populations in East Africa, with a first coastal breeding record

Raphaël Nussbaumer, Améline Nussbaumer, Don Turner and Colin Jackson

Summary

Several populations of Pied Avocet are understood to overlap in East Africa, yet the specific movements and size of each of them remains largely unclear. A review of current literature, combined with waterbird counts and recent citizen science data, suggests that potentially three populations occur in the region (Palaearctic, southern origin, and resident), and that the resident population is substantially smaller than previous estimates suggested. A new breeding record at the Kenyan coast, which only constitutes the fourth confirmed breeding location of Pied Avocet in Kenya and the first for the East African coast, demonstrates a potential overlap of Palaearctic migrants and East African residents, which may breed opportunistically along the coast. More resources are needed to carry out standardized and regular national monitoring counts in order to further elucidate the origin, movement, and numbers of Pied Avocets in East Africa.

Keywords: Avocet, migration, breeding, East Africa, bird populations

Introduction

The Pied Avocet *Recurvirostra avosetta* is a monotypic wader with a global conservation status of Least Concern (BirdLife International 2016), and an extensive breeding range from western Europe to Central Asia, and from the middle East to southern Africa (Pierce *et al.* 2020). While the origin of wintering birds in Western Africa has been researched extensively (Chambon *et al.* 2018, Hötker 2002) and has been confirmed from ringing recoveries as being western Europe (Blomert *et al.* 1990, Salvig 1995), the status of Pied Avocets in East Africa remains complex. Three populations have been suggested as overlapping in this area, though with little research to allow any validation of the different hypotheses (Delany *et al.* 2009).

First, an annual increase in the number of Pied Avocets occurring in the East African Rift Valley and Tanzania during the Palaearctic winter (Oct–Mar), but without evidence of breeding, has been attributed to the influx of Palaearctic migrants (Baker 1996, Britton 1980, Lewis & Pomeroy 1989). The Palaearctic origin is consistent with the general increase in occurrence and abundance across all eastern regions of Africa during these months. The successive increase in abundance in Israel first, followed by Northern Africa and then later East Africa suggests a post-breeding southward movement of Palaearctic birds (Appendix 1). However, to date there is no concrete evidence (such as ring recoveries) that Palaearctic birds reach East Africa and the ex-

act breeding location of these migrants remains unknown, with possibilities ranging from Eastern Europe to Asia.

Second, it has been suggested that large flocks of non-breeding birds counted from June to early August (e.g., 200 at Lake Nakuru, 800 at Lake Rukwa and 500 or more at Lake Magadi in early August 1969) could originate from southern Africa (Britton 1980). However, it was also hypothesized that the South African population might be resident (Tree 1997), breeding there from July to November (Tarboton 2001, Tree 1997). Recent citizen science data, however, show a lower reporting rate of Pied Avocets from February to July in southern Africa (Brooks & Ryan 2020, eBird 2020, Appendix 1), which could be explained by either seasonal movement to less extensively surveyed regions of sub-Saharan Africa (e.g., further north in Namibia; Dodman, 2014), or the aggregation of birds into more concentrated and widely separated groups, or both. Possible movement further north into East Africa is aligned with observations in southwest Tanzania (Baker & Baker 2020), such as a group of 800 in June at Lake Rukwa in the 1950s (Vesey-Fitzgerald & Beesley 1960).

Third, regular breeding records in the southern parts of the Kenya Rift Valley at Lake Magadi and at Lake Manyara in northern Tanzania attest to the presence of a small resident breeding population (Brown & Britton 1980, Fuggles-Couchman & Elliott 1946, Morgan-Davies 1960). This population breeds mostly after the main wet season (June–July) and occasionally after the short rains (January–February; Brown & Britton 1980). This is also confirmed by citizen science data (App. 1) as Pied Avocets are recorded throughout the year, even in June–July when no birds are reported in Israel and Northern East Africa. Beyond this, little is known about this population's movement and size, but opportunistic rain-related movement can be expected to be similar to the population in southern Africa (Delany *et al.* 2009, Tree 1997). For instance, Baker (1996) hypothesized that the large flocks gathering in June–August might be explained by birds waiting for ideal breeding conditions before spreading out in temporary waterholes created by rain.

The aim of this paper is to review the status and size of Pied Avocet populations in East Africa. To this end, we review existing literature and combine it with an analysis of the national waterbird counts of Tanzania and Kenya, and provide an updated estimate of the non-breeding and breeding populations. Finally, we report the first breeding record on the East African coast and discuss the possible origin of these birds.

Results and discussion

Estimation of the non-breeding population size

Combined with the difficulty of assigning any count of Pied Avocet (hereafter, just Avocet) to a specific origin, the variable breeding dates and unpredictable movements linked to rainfall patterns have presented a challenge in accurately estimating the size of the three populations in East Africa. This is further compounded by the fact that standardized counts are restricted to larger lakes, while breeding might be spread out in smaller temporary waterholes (e.g., Baker 1996, Lewis 1989). The size of the resident population in East Africa was recently revised from 25 000–100 000 (Delany *et al.* 2009, Stroud *et al.* 2004) to 20 000–50 000 (Dodman 2014). The initial estimate is mainly based on the mention of "45 000 or more on some Kenyan lakes" by Hayman (1986), yet as such a record cannot be verified, it is treated with caution here in the light of other historical counts (see below).

In Tanzania, Fuggles-Couchman & Elliott (1946) reported that numbers on Lake Manyara reached a peak of several thousand in the 1940s. January waterbird counts in Tanzania produced a total of 8323 Avocets in 1995 (Baker 1996), but only 2247 in 2005 (N. Baker pers. comm.). In Kenya, besides a count of 3200 at Lake Turkana in January 1986 (Taylor 1996), there are just a few records of numbers greater than around a thousand birds (e.g., Davis 2019, Pearson 1983, Turner 1992). The annual January waterbird counts in Kenya (Fig. 1) detected a mean of 2387 (s.e. 370) birds annually from 1991–2020. Ninety-three percent of all Avocets counted during those years are concentrated in three main sites (Fig. 3): Lake Elementeita (mean: 1194, s.e. 255; max: 4631), Lake Magadi (mean: 841, s.e. 212; max: 5264) and Lake Nakuru (mean: 373, s.e. 146; max: 2934). The count data reveal high annual variability in the total number of Avocets at these sites (ranging between 340 in 2015 and 7477 in 2009) without any clear trend. In addition, while some sites have seen their occupancy levels decrease (e.g., Lake Elementeita: mean of 1570 in 1991–2010 to 253 in 2011–2020), others saw an increase (Lake Magadi: mean of 597 in 1991–2010 to 1276 in 2011–2020). This suggests that Avocets winter in different lakes each year, most probably linked to water-level conditions. We can assume that Avocets from Tanzanian lakes (e.g., Lake Natron) do the same. Therefore, estimates of the number of Avocets in East Africa based on summing the maxima of each site across the years run the risk of double-counting individuals.

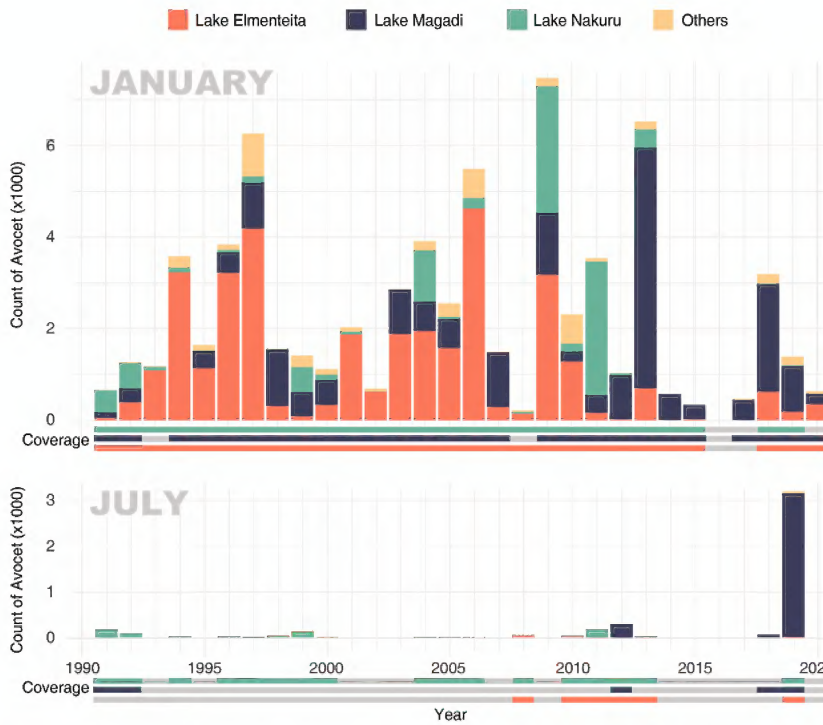

Figure 1. Number of Pied Avocets recorded during national waterbird counts in Kenya for January and July counts. The coverage lines illustrate whether counts were performed at each of the three lakes (coloured) or not (grey).

Based on data from 1995, Baker (1996) extrapolated a total non-breeding population of 12000–15000 for Tanzania, though with a caveat that the estimate might be too high. Thus, adding the Tanzanian and Kenyan counts, we can reach an estimate of 10000–20000 for non-breeding birds in East Africa. However, these counts include Palaearctic migrants, and as such cannot be used to estimate the size of the East African resident population.

Estimation of the breeding population size

An estimation of the resident breeding East African population is fraught with difficulty. While it might be assumed that a July count would exclude Palaearctic birds, it is possible that first-year Palaearctic migrants may remain on the non-breeding grounds (i.e., over-summering) as has been shown to be a common occurrence in other wader species (e.g., see McNeil *et al.* 1994). Furthermore, July would be the time of year that southern African migrants might be in the region and thus augment the resident population.

In Kenya, the only estimate of breeding birds is of "a small number" at Lake Magadi (Britton 1980, Lewis & Pomeroy 1989), while in Tanzania, Baker (1996) estimated that "a few thousand pairs" should be breeding based on the 1995 January waterbird count, acknowledging the large uncertainty due to the multiple potential breeding sites available. Meanwhile, Morgan-Davies (1960) reported only 14 breeding pairs at Manyara in 1959. Fewer waterbird counts were carried out in July than in January (Fig. 1), with 18 at Lake Nakuru (mean: 41, max: 173), six at Lake Elementeita (mean: 18, max: 43) and only three at Lake Magadi (296 in 2012, 61 in 2018 and 3135 in 2019). The exceptional count of 2019 is likely to have been caused by the flooding of Lake Natron in northern Tanzania, and ensuing population displacement.

Overall, based on these counts and field experience, we tentatively estimate there to be an East African breeding population of maximum 750 pairs in Kenya and Tanzania combined.

First coastal breeding record

On 23 January 2020, as part of the annual international waterbird counts, 68 Pied Avocets were observed at Krystalline Salt Works Ltd. in Gongoni, coastal Kenya (3°02′18″ S, 40°08′51″ E), on a pan with shallow saline water. The presence of at least four chicks confirmed that some had bred recently at the site. Given the size of the chicks, they were likely to have been only two to three weeks old (Fig. 2).

Avocets had been recorded on the salt pans for three consecutive years of waterbird counts in January: 101 were counted in 2018, 72 in 2019 and 68 in 2020 (Nussbaumer *et al.* 2021). A follow-up visit to Krystalline Salt Works was conducted on 5 June 2020, during which 133 individuals were counted but no indication of breeding was observed.

Known and accepted Kenyan breeding records are confined to an old sighting at Lake Nakuru (Jackson 1938), "annual nesting of small numbers" at Lake Magadi (Brown & Britton 1980), and a record from Amboseli (Lewis 1989). Large numbers of breeding Avocets reported from Nyeri freshwater marshes (Mackworth-Praed & Grant 1952) are considered a doubtful record (Lewis 1989, Lewis & Pomeroy 1989). In Tanzania, nesting has been recorded in several locations in the north of the country but never near the coast (Baker 1996).

Figure 2. Pied Avocet adult and chicks at Gongoni, central Kenya coast, on 23 January 2020 (Photo: M. Adamjee).

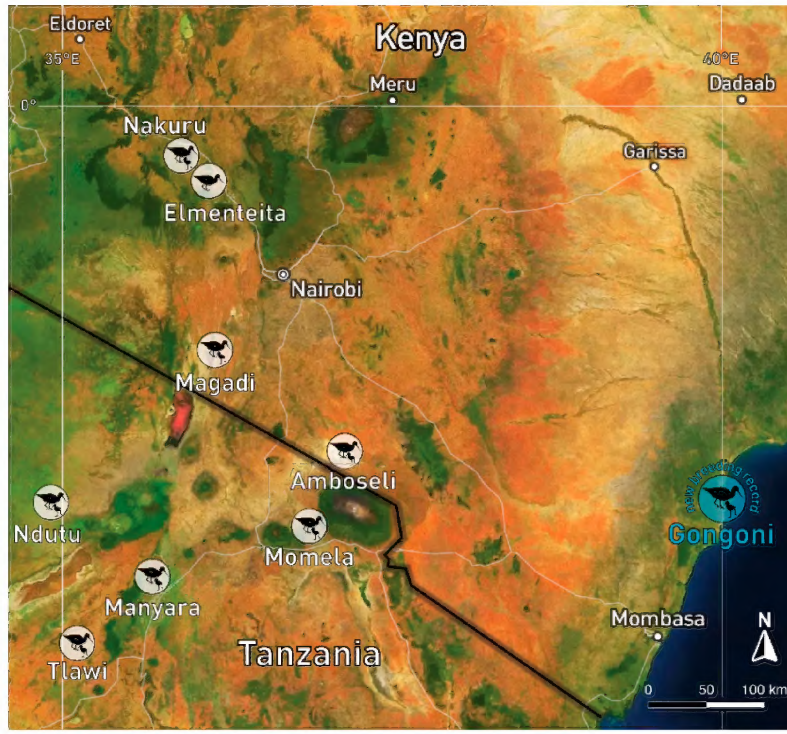

Figure 3. Map of known breeding sites for Pied Avocet in Kenya and Tanzania (Source: Mapbox, OpenStreetMap).

All the existing breeding records in East Africa were in shallow saline-alkaline lakes, which resemble the shallow saltwater pans where this breeding event was observed. Saltpans constitute a favourable nesting habitat for this species in other areas of its distribution (e.g., Chokri & Selmi 2011, Hötker & West 2005, Lei *et al.* 2021, Pierce *et al.* 2020).

The timing of this breeding record falls within the short rains, which is typically a secondary breeding season for the species (see Introduction). Indeed, as is the case for many species in regions with bimodal rainfall regimes, peak breeding for Avocets occurs in June–July in East Africa, at the end of the long rains (Brown & Britton 1980, Lewis & Pomeroy 1989). However, breeding after the short rains has also been recorded in northern Tanzania in January (Baker 1996) and in Kenya in February (Brown & Britton 1980). The timing of the breeding described here matches these other East African breeding records and might be further explained by the extreme positive Inverse Ocean Dipole event in 2019 which caused extended short rains and high water levels (Lu & Ren 2020, Nussbaumer *et al.* 2020).

Origin of Avocets on the coast

The counts at the Sabaki River mouth, the only monitored site where Avocets are regularly sighted in coastal Kenya (Nussbaumer *et al.* 2021), suggest that most birds occurring there belong to the migratory Palaearctic population. Indeed, Avocets are mainly present from October to March with peak numbers in early December (Fig. 4). Further south along the coast, around Dar es Salaam, a similar seasonal pattern is observed with birds present from September to April (Baker & Baker 2020).

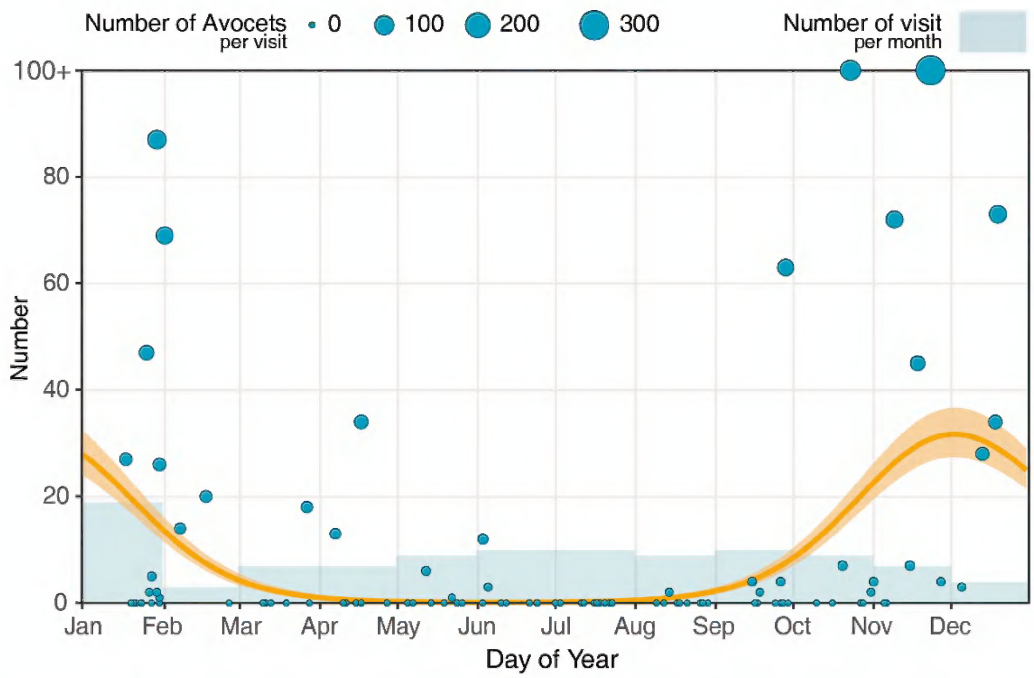

Figure 4. Counts of Pied Avocet at the Sabaki River Mouth (3°10′05″S, 40°08′42″E), located 18 km south of Gongoni, where monthly waterbird counts are conducted by A Rocha Kenya (1998–2020). The yellow line represents the smoothing of the counts using a generalized additive model with its uncertainty.

However, this new breeding record suggests that there is an overlap of occurrence between East African and Palaearctic populations on the coast and dispels the assumption that avocets on the coast are exclusively migratory. This is further confirmed by the later count of 133 birds at the salt pans in June 2020. Yet the lack

of prior breeding records, the small number of chicks observed, and the absence of Avocets on nests suggest that opportunistic breeding at Gongoni only occurs when conditions are suitable, with birds arriving there from the population in the Rift Valley. Similarly, the small flocks observed at Sabaki in June (Fig. 4) could be attributable to local movements of the resident East African population based on rainfall patterns and the water level of the Sabaki River. However, in the absence of ringing or satellite tracking data, the interchange of birds between these two regions remains unconfirmed.

Acknowledgements

We wish to thank Krystalline Salt Works Ltd for their continuing collaboration and for kindly authorizing A Rocha Kenya to carry out annual waterbird counts on their site. We would like to thank Neil Baker for his contributions and sharing bird count data. Thanks to Mustafa Adamjee for the photo of the Pied Avocet chicks, and thanks to Luc Lens and James Bradley for their valuable comments on this paper.

Data Accessibility

All the data and codes used for this study can be found at https://github.com/A-Rocha-Kenya/Pied-Avocet-Breeding-And-Review.

References

Baker, N.E. 1996. Tanzania Waterbird Count: The First Coordinated Count on the Major Wetlands of Tanzania, January 1995. BirdLife International.

Baker, N.E., & Baker, L. 2020. Tanzania Bird Atlas Preliminary Map. http://tanzaniabirdatlas.net/.

BirdLife International. 2016. *Recurvirostra avosett*a. The IUCN Red List of Threatened Species 2016.

Blomert, A.M., Engelmoer, M. & Ntiamoa-Baidu, Y. 1990. The Banc d'Arguin, Mauritania, as a meeting point for avocets during spring migration. *Ardea* 78(1–2): 185–192.

Britton, P.L. (ed.) 1980. *Birds of East Africa: their habitat, status and distribution*. Nairobi: East Africa Natural History Society.

Brooks, M. & Ryan, P. 2020. Southern African Bird Atlas Project 2. Animal Demography Unit, Department of Zoology, University of Cape Town.

Brown, L.H. & Britton, P.L.1980. *The breeding seasons of East African birds*. Nairobi: East Africa Natural History Society. https://doi.org/10.5962/bhl.title.114419.

Chambon, R., Dugravot, S., Paillisson, J.M., Lemesle, J.C., Ysnel, F. & Gélinaud, G. 2018. Partial migration in inexperienced pied avocets *Recurvirostra avosetta*: distribution pattern and correlates. *Journal of Avian Biology* 49(6). https://doi.org/10.1111/jav.01549.

Chokri, M.A. & Selmi, S. 2011. Nesting ecology of pied avocet *Recurvirostra avosetta* in Sfax salina, Tunisia. *Ostrich* 82(1): 11–16.

Davis, T. 2019. eBird Checklist: https://ebird.org/checklist/S62436006. In eBird: An online database of bird distribution and abundance [web application]. https://ebird.org/checklist/S62436006.

Delany, S., Scott, D., Dodman, T. & Stroud, D. 2009. *An atlas of wader populations in Africa and Western Eurasia*. Wageningen: Wetlands International.

Dodman, T. 2014. Status, *Estimates and Trends of Waterbird Populations in Africa: AEWA-listed African populations*.150. Wageningen: Wetlands International.

eBird. 2020. eBird: An online database of bird distribution and abundance [web application]. Ithaca, New York: EBird, Cornell Lab of Ornithology. http://www.ebird.org.

Fuggles-Couchman, N.R. & Elliott, H.F.I. 1946. Some records and field-notes from North-Eastern Tanganyika Territory. *Ibis* 88(3): 327–347.

Hayman, P., Marchant, J. & Prater, T. 1986. *Shorebirds: an Identification Guide to Waders of the World*. London: Croom Helm.

Hötker, H. 2002. Arrival of pied avocets *Recurvirostra avosetta* at the breeding site: effects of winter quarters and consequences for reproductive success. *Ardea* 90(3): 379–387.

Hötker, H. & West, R. 2005. Population size, population development and habitat use by Avocets in Western Europe at the end of the 20th century. *Bulletin-Wader Study Group* 107: 57–112.

Lewis, A.D. (1989). A new Kenyan breeding site for the Avocet *Recurvirostra avosetta*. *Scopus* 13(2): 121–122.

Lei, W., Wu, Y., Wu, F., Piersma, T., Zhang, Z., & Masero, J.A. 2021. Artificial Wetlands as Breeding Habitats for Shorebirds: A Case Study on Pied Avocets in China's Largest Saltpan Complex. *Frontiers in Ecology and Evolution*, 9:622756. doi: 10.3389/fevo.2021.622756.

Lewis, A. & Pomeroy, D. 1989. *A Bird Atlas of Kenya*. Rotterdam: A. A. Balkema.

Lu, B. & Ren, H.L. 2020. What Caused the Extreme Indian Ocean Dipole Event in 2019? *Geophysical Research Letters* 47(11): 0–2.

Mackworth-Praed, C.W. & Grant, C.H.B. 1952. *Birds of eastern and north eastern Africa* Vol. 1. London: Longmans, Green.

McNeil, R., Diaz, M.T. & Villeneuve, A. 1994. The mystery of shorebird over-summering—a new hypothesis. *Ardea* 82(1): 143–151.

Morgan-Davies, A.M. 1960. A Nesting Colony of Avocets at Lake Manyara Tanganyika. *Journal of the East Africa Natural History Society* 23(6): 241–243.

Njoroge, P. & Brooks, M. 2020. Kenya Birdmap (Full protocol records). Kenya BirdMap, National Museums of Kenya.

Nussbaumer, R., Lennox, K., Baya, A., Gijsbertsen, J., Kinzer, A. & Jackson, C.H.W. 2021. Waterbird Counts at Sabaki River Mouth and Mida Creek. A Rocha Kenya.

Nussbaumer, R., Lennox, K. & Jackson, C. 2020. National Waterbird Counts Report Kenya, Coast (Issue May).

Pearson, D.J. 1983. East African Bird Report 1981. *Scopus* 5(5): 131–153.

Pierce, R.J., Kirwan, G.M. & Boesman, P.F.D. 2020. Pied Avocet (*Recurvirostra avosetta*), in del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. & de Juana, E. (eds). *Birds of the World*. Ithaca, New York: Cornell Lab of Ornithology.https://doi.org/10.2173/bow.pieavo1.01.

Salvig, J.C. 1995. Migratory movements and mortality of Danish Avocets *Recurvirostra avosetta*. *Ringing and Migration* 16(2): 79–90.

Stroud, D.A., Davidson, N.C., West, R., Scott, D.A., Haanstra, L., Thorup, O., Ganter, B. & Delany, S. 2004. Status of migratory wader populations in Africa and Western Eurasia in the 1990s. *International Wader Studies* 15: 1–259.

Tarboton, W. 2001. *A guide to the nests and eggs of southern African birds*. South Africa: Struik.

Taylor, B. 1996. Resident and migrant waterbirds at Lake Turkana. In L. A. Bennun & M. Fasola (eds). *Quaderni della Civica Stazione Idrobiological di Milano* (Vol. 21, pp: 7–62).

Tree, A.J. 1997. Avocet (pp. 434-435), in Harrison, J.A., Allan, D.G., Underhill, L.G., Herremans, M., Tree, A.J., Parker, V. & Brown, C.J. (eds). *The Atlas of Southern African Birds*. Johannesburg: BirdLife South Africa.

Turner, D.A. 1992. East African Bird Report 1990. *Scopus* 14(3): 130–158.

Urban, E.K., Fry, C.H. & Keith, S. 1986. *The birds of Africa*. Vol. 2. London & New York: Academic Press.

Vesey-Fitzgerald, D.F. & Beesley, J.S.S. 1960. An annotated list of the birds of the Rukwa Valley. Tanganyika. *Tanganyika Notes and Records* 54: 91–110.

Raphaël Nussbaumer
A Rocha Kenya, P.O. Box 383, 80202 Watamu, Kenya. Email: raphael.nussbaumer@arocha.org

Améline Nussbaumer
A Rocha Kenya, P.O. Box 383, 80202 Watamu, Kenya. Email: ameline.nussbaumer@gmail.com

Don Turner
P.O. Box 1651, Naivasha 20117, Kenya. Email: don@originsafaris.info

Colin Jackson
A Rocha Kenya, P.O. Box 383, 80202 Watamu, Kenya. Email: colin.jackson@arocha.org

Scopus 41(2): 1-10, July 2021
Received 28 April 2021

Appendix 1

In this appendix we aggregate citizen science data of Pied Avocet across multiple regions from South Africa to Israel to show the spatial and temporal change in occurrence. These data can help in elucidating the movement and overlap of the three populations of Pied Avocet overlapping in East Africa.

We downloaded barchart data from eBird (e.g. https://ebird.org/barchart?r=ZA,ZW,NA,MZ,BW&bmo=1&emo=12&byr=1900&eyr=2021&spp=pieavo1) (eBird, 2020) which provided frequency (i.e., percentage of complete checklists reporting a Pied Avocet) and abundance (i.e., average number of Pied Avocets reported). We aggregated data in five regions (Table 1) based on similarity of frequency and abundance data, as well as providing a sufficient number of checklists. We also downloaded the 'full protocol card' data from the African Bird Atlas Project (ABAP) (http://www.birdmap.africa/species/269) and extracted the reporting rate (percentage of cards reporting Pied Avocets) for Southern Africa and Kenya (Brooks & Ryan 2020, Njoroge & Brooks 2020).

Table 1. Description of regions used in Figure 5. Sample refers to checklists for eBird and cards for African Bird Atlas Project (ABAP). Countries providing a large proportion of the data for the region are marked with an asterisk.

Name of region	Countries	Number of samples	Source
Southern Africa	Zambia, Zimbabwe, Namibia, Mozambique, Botswana and South Africa*	108 005	eBird
		271 236	ABAP
East Africa	Kenya, Tanzania and Uganda	60 046	eBird
		8 221	ABAP
Northern East Africa	Ethiopia*, Eritrea, Djibouti, Soudan	10 373	eBird
Israel	Israel*, Egypt and Jordan	74 998	eBird
Gulf countries	United Arab Emirates, Qatar, Kuwait	37 577	eBird

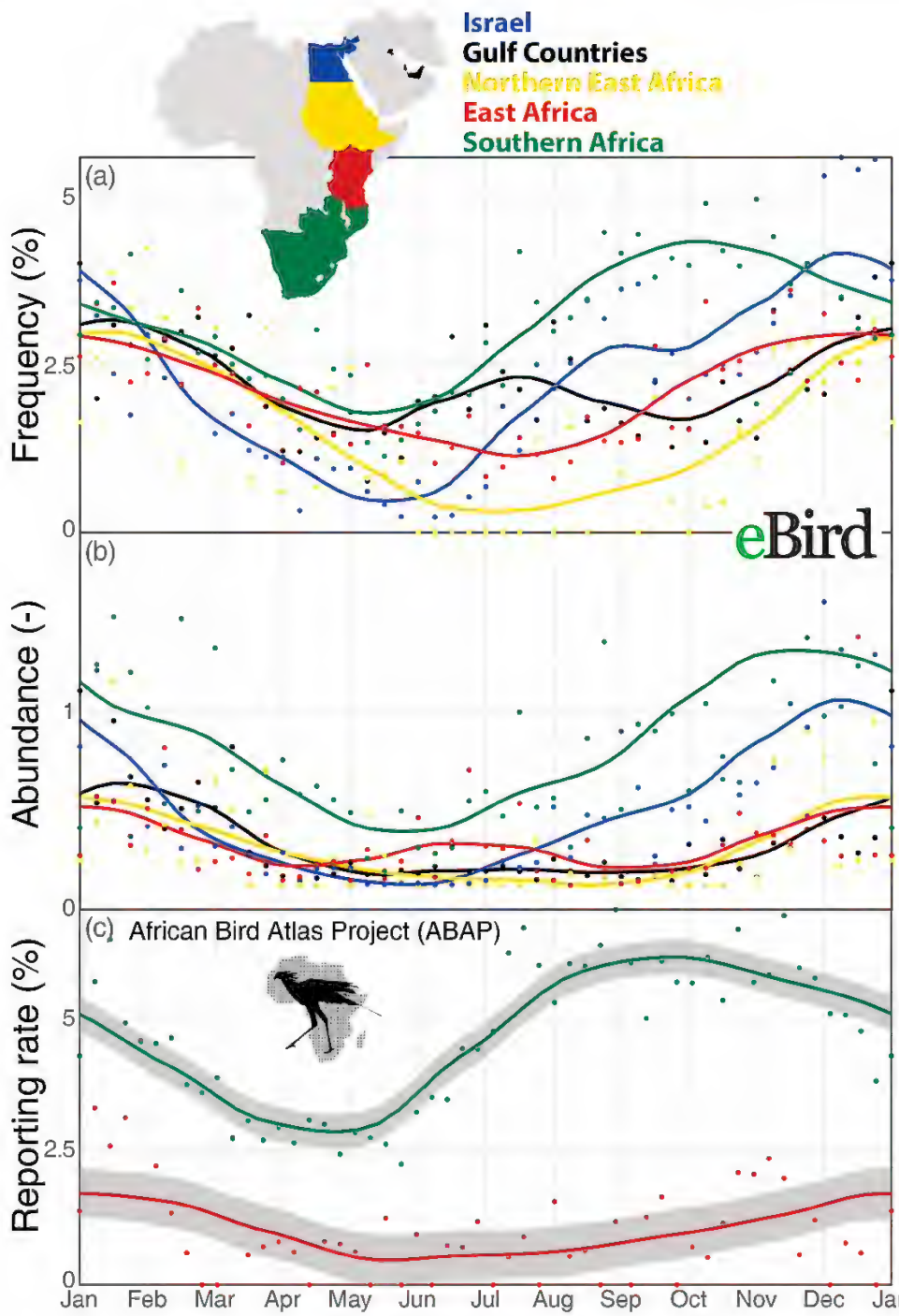

Figure 5. Phenology of Pied Avocet occurrence from South Africa to Israel from citizen science data: (a) percentage of complete checklists reporting Pied Avocet in the eBird dataset, (b) average number of Pied Avocets reported in checklists in the eBird dataset, and (c) reporting rate of Pied Avocets in cards for African Bird Atlas Project (ABAP). The coloured lines represent the same coloured region in the map.

Scopus 41(2): 11–22, July 2021

Occurrence and habits of the Gambaga Flycatcher *Muscicapa gambagae* in Kenya, including the first description of its song

James E. Bradley and Brian W. Finch

Summary

Historically, the Gambaga Flycatcher *Muscicapa gambagae* has been a relatively poorly known bird in Kenya. Following a review of all known records in Kenya, we show that breeding of presumed resident birds is known from three discreet areas, but that as many as 47% of all records, from the months of October to March, come from areas where breeding is not known. This finding indicates a migratory origin for these individuals, and the concurrent absence of northern, summer-breeding Gambaga Flycatchers from the mountainous regions of western Saudi Arabia, Yemen and northern Somalia point to that region as a likely origin of these winter visitors. Furthermore, records show that the frequency of occurrence of the Gambaga Flycatcher in Kenya is also increasing, with a rate of reporting since 2000 which is four times higher than during the period 1960–2000, likely representing a shift in range. Lastly, we also describe some habitat characteristics at preferred sites, and provide the first published sonograms and accompanying description of the song.

Keywords: Gambaga Flycatcher, distribution, migration, habitat, vocalizations

Introduction

The Gambaga Flycatcher *Muscicapa gambagae* is a small to medium sized Flycatcher with a drab appearance and a patchy distribution through the Sahelian zone from West Africa east to Kenya and north to the Arabian Peninsula (Fry 1997, Taylor 2020). Across its range it occurs locally in open woodlands in semiarid to semi-humid habitats but is nowhere numerous. In the western mountainous regions of Saudi Arabia, in Yemen and at Mt Wagar in northern Somalia, it is only present as a breeding summer visitor from April to September (Ash & Miskell 1998, Porter *et al.* 2004, Müller 2010), whereas elsewhere, including in Sudan, northern Uganda, Ethiopia and parts of west Africa, it has been speculated that it is an intra-African rains migrant, with only occasional breeding being reported (Nikolaus 1997, Salewski *et al.* 2003, Carswell *et al.* 2005, Ash & Atkins 2009).

In Kenya, Britton (1980), Lewis & Pomeroy (1989) and Zimmerman *et al.* (1996) all refer to the Gambaga Flycatcher as being little known, local and uncommon, and occurring in dry bushed and wooded country. With only twenty records prior to the 1990s, and a first breeding record as recently as 1990, this has indeed been the case for the Gambaga Flycatcher until comparatively recently. An increase in records over the past two decades, however, due in part to increasing observer familiarity with the species, permits a more in-depth review of its national status than has been possible previously.

To comprehensively assess the status of Gambaga Flycatcher in Kenya, records were collated from the personal notes of the authors, literature accounts, published records and an open user internet database, eBird. Additionally, a number of records were forwarded to the authors through private correspondence (see Acknowledgements), and observations of the species reported to a local email [listserve] forum Kenyabirdsnet are also included. Specimen databases VertNet and the Global Biodiversity Information Facility were consulted for historical records. Sight records documented here which are not supported by photographic or audio evidence, are only those considered by the authors to have been reliably reported.

Results and Discussion

Distribution and Habitat

Ninety-two records of Gambaga Flycatcher in Kenya (all but two dated to month and year at a minimum) were accepted for this study (up to February 2020), depicting a range that is both fragmented as well as only seasonally occupied in some areas (Fig. 1, Appendix A). It remains present in some well-known areas from where it was reported prior to the year 2000, such as in the Archer's Post–Wamba region, the Kerio Valley and in the Kongelai-Mt Elgon area, while a number of new sites have also been found. These include the Lake Baringo area, where Gambaga Flycatchers have been seen near-annually since 2006 during the November–March period, while since 2009, the species has also been reported on a number of occasions at Amboseli NP. Since 2012, occurrence has become regular during the November–March period from the Voi–Sagala Lodge area of the Tsavo region as well, with the species being previously unknown from all three of these well watched sites. Since 2000, single records have also come from Tsavo East NP, Mwea National Reserve, and Mpala Ranch, Laikipia.

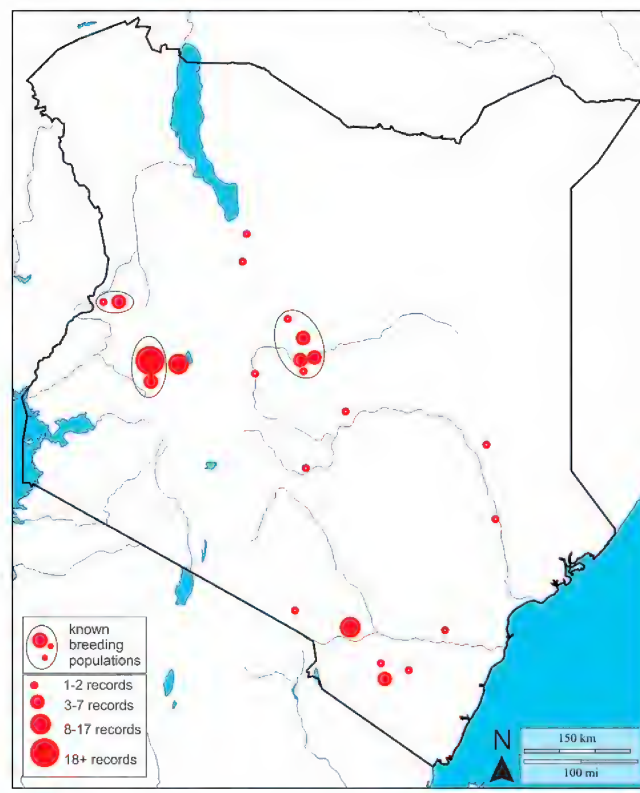

Figure 1. Distribution of Gambaga Flycatcher records in Kenya (n=92).

Although the increase in records in these areas is in part due to improved knowledge of the species among field observers, it also seems likely that the trend reflects a genuine shift or expansion of range. Numerically, reporting frequency in the 20-year

period from 2000 to 2020 as compared with the 40-year period from 1960 to 2000 (Fig. 2) showed a four-fold increase, with the steady series of winter (Nov–Mar) records from 2006 onwards at Lake Baringo standing out as strong evidence of a new distribution. Furthermore, of the 16 records from Ngulia between 1969 and 2019, nine were ringed from 2010 onwards, comprising a more than five-fold increase in the frequency of occurrence in the last decade as compared with the previous four. While there have been no recent records from historically known sites at South Horr, Baragoi, Garissa, Bura and Galana Ranch, this should not be interpreted as a disappearance from those areas as they are rarely visited by ornithologists and birders.

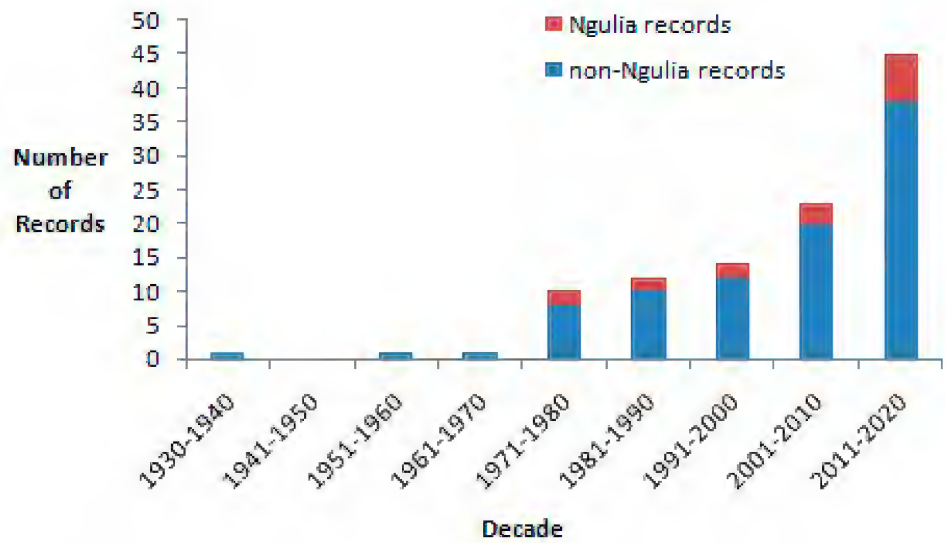

Figure 2. Dated Kenya records of Gambaga Flycatcher by decade from 1930–2020 (n=91), showing those netted and/or observed at Ngulia Lodge, Tsavo West NP (red), and those observed elsewhere in Kenya (blue).

In Kenya, favoured habitat used by the Gambaga Flycatcher typically comprises mature semi-deciduous woodlands of low to medium canopy height (3–6 m) that may be dominated by one particular species or may be more mixed in character. In the Voi–Sagala Lodge area, for example, mature dense stands of *Commiphora* are favoured; while in the Kerio Valley birds inhabit open patchy woodlands characterized by mixed *Terminalia*, *Acacia*, *Combretum* and *Erythrina* thickets in rocky terrain. In Samburu and Shaba National Reserves by contrast, it favours the margins of mature riverine *Acacia* habitats. Altitudes favoured by the species appear to vary greatly, suggesting its distribution is more closely determined by the distribution of suitable woodland habitat. While recorded as low as 70 m above sea level at Bura on the Tana River, it is most often reported from 600–1500 m at locations such as the Tsavo region, Archer's Post and the Kerio Valley. It has, however, been recorded as high as 1900 m on the Kongelai Escarpment. This is consistent with the habits of the species elsewhere, such as in Yemen, where dry *acacia* woods in wadis as low as 700 m are favoured, but with rather different habitat such as *Juniperus* woods up to 2300 m also being used (Müller 2010).

A feature characterizing most all locations where the species is regularly found is a fairly steep humidity gradient from arid to locally semi-humid sites, where thornscrub habitats transition to woodland. As such, it is more common near terrain that promotes a variety of vegetation associations resulting from variations in aspect and gradient of slopes, and the effect of rainshadow. For example, the Kerio Valley, the eastern foothills of the Tugen Hills at Baringo, and the eastern foothills of the Sagala Hills at Sagala Lodge, are all areas that receive less direct sunlight (and drying) than do surrounding flatter areas due to the shading effect of nearby high terrain. This, in addition to a higher water table which is often present in foothill terrain, may promote the growth of woodland tree species versus those thornscrub species that persist in more exposed areas. Elsewhere, such as near Archer's Post and at Garissa, the proximity to a permanently flowing river promotes a locally steep humidity gradient and associated woodland habitat which may be suitable.

Seasonality of occurrence and breeding records

Breeding records of Gambaga Flycatcher in Kenya come from the Kerio Valley, where two nests with eggs were found on 20 March 1990 (Richards 1992), and from Samburu Game Reserve, where recently fledged young have been observed in November (BWF, pers. obs.). Probable breeding has also been reported from the Kanyarakwat–Kongelai area on the northeast slopes of Mount Elgon, where an individual (one of a pair) carrying nest material was observed on 26 February 2020 (JEB, pers. obs.). Elsewhere, juveniles recorded in Kenya in October–December (including 5 ringed at Ngulia) cannot be confirmed as having hatched locally, and it seems probable that these are entirely migrants from north of Kenya. This is supported by their fairly regular capture during November–December nocturnal banding at Ngulia in Tsavo West NP (see Appendix A), and often with southward Spotted Flycatcher *M. striata* passage from the Palaearctic.

Establishing the definitive presence of migrant birds in Kenya, however, is made difficult by the presence of resident breeding birds in some parts of the country. To ascertain the possibility that some birds in Kenya might be migrants, and to establish the seasonality of their occurrence, we also reviewed records excluding those from sites where breeding is known (Kanyarakwat–Kongelai, Kerio Valley, Samburu–Archer's Post). When reviewing only records from sites where breeding has not been reported (n=46), a clear picture of seasonality emerges, with all records except for one being in the October–March period (Fig. 3). A single record from Amboseli NP is anomalous with respect to this apparent seasonality; however, this likely refers to a resident bird at a site where breeding has yet to be detected.

The view that at least some Kenyan birds may be migratory has been suggested previously on the basis of a limited number of records in the November–April period (Lewis & Pomeroy 1989), but has not been explored further until now. A general pattern of distribution emerging is that most of the breeding population occurs in central-north to western Kenya, while the migratory population appears to be largely confined to central-east and southeast Kenya (although some overlap of populations in central-north Kenya seems likely). A further point supporting a non-breeding, winter-visitor status and migratory origin for these birds, is that they appear not to vocalize in Kenya, whereas birds in known breeding areas such as the Kerio Valley and Mt Elgon–Kongelai area are fairly regular songsters.

The most likely origin of migrant Gambaga Flycatchers in Kenya is the western mountains of Saudi Arabia, and Yemen, and northern Somalia. This may be concluded based on: a) their absence in that region during the October–March period (eBird 2021) when birds are most often reported in eastern Kenya, b) only a very few records from Uganda, which is to the west of an Arabian Peninsula–eastern Kenya flyway, and, c) records from Djibouti (n=11) which all fall in the months September and October (eBird 2021), indicative of southbound autumn passage across the Bab-el-Mandeb straits from Yemen. This mixed pattern of breeding and seasonally occurring birds present in relatively close proximity to each other also matches that observed by Salewski *et al.* (2003) in the Ivory Coast, where migratory birds are present from September to April, with breeding reported by some birds in February–April. While these authors attribute seasonally occurring birds in the Ivory Coast to intra-African migrants moving with the rains (as has hitherto been suspected with regards to some birds in Kenya), our analysis suggests that seasonally occurring birds in Kenya are primarily from outside the African continent. Whether this is also the case concerning birds in the Ivory Coast may merit further consideration.

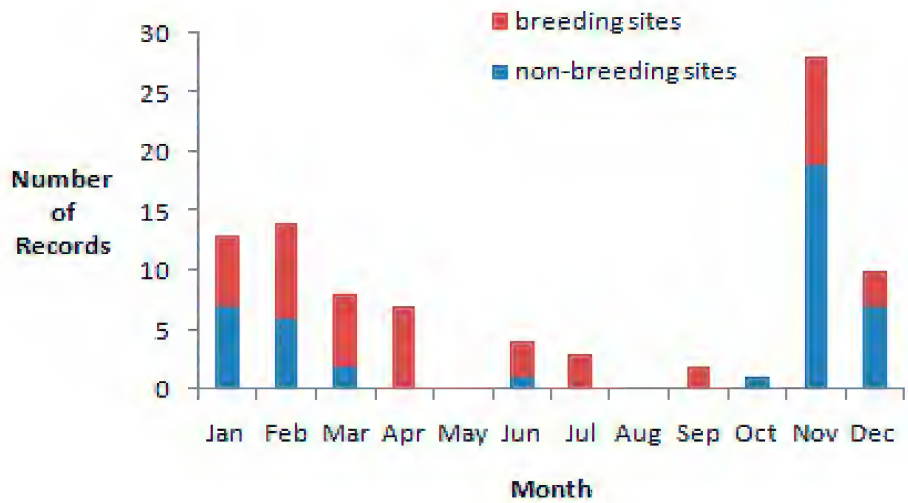

Figure 3. Dated Kenya records of Gambaga Flycatcher by month from 1930 to the present (n=90), showing records from breeding sites (red) and records from sites where breeding is as yet unknown (blue).

Vocalizations

The vocalizations of Gambaga Flycatcher are not fully known, with literature accounts mostly referring to only a sharp call note with the quality of a snapping stick (Fry 1997). Müller (2010), however, briefly refers to a song as being "*more varied than that of Spotted Flycatcher* Muscicapa striata, *with a number of notes on a different level*", but to our knowledge, few published recordings exist. However, the authors have each made several recordings of Gambaga Flycatcher in Kenya, including of the song, which is detailed together with the previously known call here:

Long song is comprised of an unmusical, lazy and disjointed series of sharp, wheezy and scratchy notes with up to 7 per phrase, and with phrases repeated with no clear pattern (Fig. 4; A–D). It is rhythmically similar to African Dusky Flycatcher M. adusta *in this respect but slower, lower pitched and lacking in the frenetic embellishments of that species. Also gives a short song comprised of a buzzy, three note motif 'djrrr-ZEE-whit' (Fig. 4; E), repeated at intervals of 2.4–3.8 s. Calls comprise a hard and sharp 'chick' note with the quality of a snapping stick, which may be given singly or as a doublet (Fig 4; F), or in a steady agitated series of single notes at ~ 1.5–2.0 notes/s, and periodically interspersed with squeaky song notes or a harsh ratchet-like 'chrrrt' (Fig. 4; G).*

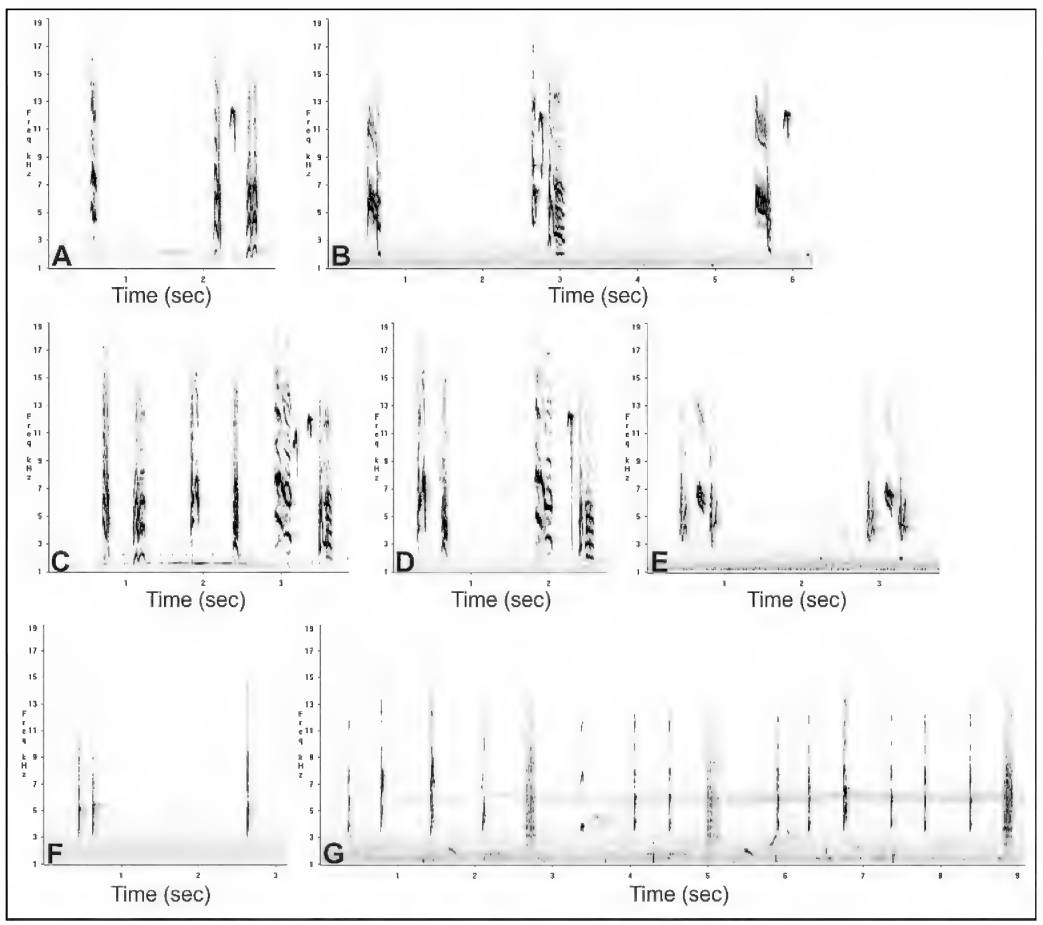

Figure 4. Vocalizations of Gambaga Flycatcher in Kenya, showing several examples of long song phrases of 3–7 notes (A–D; Kerio Valley), a repeated short 3-note motif (E; Kerio Valley), typical sharp call notes in singles and doubles (F; Kanyarakwat, Mt. Elgon) and an agitated series of typical call notes interspersed with other short and emphatic notes (G; Kongelai Escarpment). Recordings by J. Bradley.

Conclusions

The Gambaga Flycatcher is clearly rather local in Kenya and closely tied to mature woodlands in semi-arid to semi-humid regions, often associated with foothill terrain and other rugged topography (e.g., gorges, ravines and canyons) conducive to local pockets of increased humidity. Suitable, but yet to be surveyed habitat for this species exists across much of the outlying foothills of eastern Kenya from Tsavo National Park north through Kitui and Tharaka districts to the Matthews Range, the Ndoto Mountains, and Mt Nyiru foothills.

Also evident from the pattern of records from sites where breeding has not been reported is that approximately half of the records in Kenya refer to non-residents. While the Gambaga Flycatcher has not been previously confirmed as migratory in East Africa, the evidence presented here strongly supports this for birds occurring seasonally in eastern Kenya from September/October to March/April. Furthermore, evidence suggests that these birds originate from the Middle East, and are not intra-African rains migrants as has previously been thought. Meanwhile, resident birds breeding from February to April and/or from October to November, occur from central-north Kenya westwards.

In view of a migratory origin accounting for half of the birds recorded in Kenya, and that the frequency of occurrence of this species is also increasing, it is perhaps surprising that Gambaga Flycatcher has yet to be recorded in Tanzania. Given the proximity of regularly used sites to areas with similar habitat in northern Tanzania in particular, the species should be sought in locations such as Mkomazi National Park, the Pangani River Valley and between Namanga and Mt Kilimanjaro, especially in November.

Acknowledgements

We would like to thank field observers who have shared their records on eBird and a local Kenyan email [listserve] forum Kenyabirdsnet. We also thank Steven Easley, Nik Borrow and Bernard Chege for sharing their observations with us, while we are grateful to Graeme Backhurst and Martin Cade for forwarding records of birds ringed at Ngulia Lodge. We also thank Don Turner and an anonymous reviewer for very helpful comments and suggestions, and Norbert Cordeiro for serving as a stand-in editor for the paper.

References

Ash, J.S. & Atkins, J. 2009. *Birds of Ethiopia and Eritrea*. London: Christopher Helm.

Ash, J.S. & Miskell, J.E. 1998. *Birds of Somalia*. Sussex: Pica Press

Backhurst, G.C & Pearson, D.J. 2002. Migration at Ngulia 2000 and 2001. *Kenya Birds* 9: 24-26.

Britton, P.L. (Ed.) 1980. *Birds of East Africa, their habitat, status and distribution*. Nairobi: East Africa Natural History Society.

Carswell, M., Pomeroy, D., Reynolds, J. & Tushabe, H. 2005. *The Bird Atlas of Uganda*. Oxford, UK: British Ornithologists' Club & British Ornithologists' Union.

eBird. 2021. eBird: An online database of bird distribution and abundance [web application]. Ithaca: Cornell Lab of Ornithology. Available: http://www.ebird.org. (Accessed: February 12, 2021).

Fry, C.H. 1997. Gambaga Flycatcher *Muscicapa gambagae*. Pp. 466–467 in Urban, E.K., Fry, C.H. & Keith, S. (eds.) *The birds of Africa, vol. 5*. London: Academic Press.

Jackson, C. 1997. Records. *Kenya Birds* 6: 41–58.

Lens, L. 1994. Mt. Ololokwe resurveyed. *Kenya Birds* 4(1): 2.

Lewis, A. & Pomeroy, D. 1989. *Bird Atlas of Kenya*. Rotterdam: A.A. Balkema.

Müller, W. 2010. Observations on the Gambaga Flycatcher *Muscicapa gambagae* in Yemen, May 2009. *Sandgrouse* 32: 50–54.

Nikolaus, G. 1987. Distribution Atlas of Sudan's birds with notes on habitat and status. *Bonner Zoologische Monographien* Nr. 25. Alexander Koenig Museum, Bonn. Germany.

Pearson, D.J, Lewis, A.D. & Turner, D.A. 1980. The Gambaga Flycatcher *Muscicapa gambagae* in northern Kenya. *Scopus* 4(1): 96.

Pearson, D.J. & Turner, D.A. 1998. Review of Kenya bird records 1992–1996. *Scopus* 20: 65–83.

Porter, R.F., Christensen, S. & Schiermacker-Hansen, P. 2004. *Birds of the Middle East*. New Jersey: Princeton.

Records Sub-committee 2002a. Records: World Birdwatch 2001. *Kenya Birds* 10: 36–37.

Records Sub-committee 2002b. Records: Afrotropical species. *Kenya Birds* 10: 37–41.

Richards, D. 1992. First breeding record for Gambaga Flycatcher *Muscicapa gambagae* in East Africa. *Scopus* 15: 137–138.

Salewski, V., Falk, K.H., Bairlein, F. & Leisler, B. 2003. Gambaga Flycatcher *Muscicapa gambagae*: evidence for migration in West Africa? *Bulletin of the British Ornithologists' Club* 123(1): 48–51.

Taylor, B. 2020. Gambaga Flycatcher *Muscicapa gambagae.* Version 1.0 in del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A., & de Juana, E. (eds.) *Birds of the World.* Ithaca: Cornell Lab of Ornithology. *https://doi.org/10.2173/bow.gamfly1.01.*

Wilson, N. & Wilson, V.G. 1994. Avifauna of the southern Kerio Valley with emphasis on the area around the Kenya Fluorspar Mine site, August 1989–July 1993. *Scopus* 18(2): 65–115.

Zimmerman, D.A., Turner, D.A. & Pearson, D.J. 1996. *Birds of Kenya and northern Tanzania*. Halfway House, South Africa: Russel Friedman Books.

James Bradley
7961 East Saanich Rd., Saanichton, BC, Canada, V8M 1T4. Email: james_bradley@ymail.com

Brian Finch
P.O. Box 15568, *Mbagathi, Nairobi 00503, Kenya. Email: birdfinch@gmail.com*

Scopus 41(2): 11-22, July 2021
Received 17 March 2021

Appendix A. Gambaga Flycatcher *Muscicapa gambagae* records in Kenya. LACM = Los Angeles County Museum, FMNH = Field Museum of Natural History, YPB = Yale Peabody Museum, EABR = East Africa Bird Report (*Scopus*), RSc = Records Subcommittee, * precise date not traced.

Record no.	Date	Location	Number of birds	Observer(s)	Notes	Reference
1*	unknown	Mt Elgon	1	unknown	specimen	Pearson *et al.* 1980
2	28 February 1930	Archer's Post	1	A.B. Fuller	specimen	YPM #049146
3	12 December 1958	South Horr	1	unknown	specimen	FMNH #370100
4	23 March 1963	Bura, Tana River	1	J.G. Williams	adult specimen	LACM #55830
5	08 November 1978	Ngulia Safari Lodge, Tsavo West NP	2	G.C. Backhurst	juveniles	EABR 1978
6	05 February 1978	20 km south of Ura Gate, Meru NP	1	D.J. Pearson	adult	Pearson *et al.* 1980
7	06 February 1978	Isiolo	1	D.J. Pearson	adult	Pearson *et al.* 1980
8	18-19 March 1980	Mt Ololokwe	1	D.J. Pearson, A.D. Lewis	adult, freshly moulted	Pearson *et al.* 1980
9	07 April 1980	Mt Ololokwe	1	D.A. Turner	adult	Pearson *et al.* 1980
10	09 November 1980	Lerata	3	D.J. Pearson, A.E. Butterworth	adults and a juvenile	Pearson *et al.* 1980
11	09 November 1980	Archer's Post	1	D. J. Pearson, A.E. Butterworth	adult	Pearson *et al.* 1980
12	08 November 1980	Ngulia Safari Lodge, Tsavo West NP	1	G.C. Backhurst, D.J. Pearson	juvenile	EABR 1980
13	06 January 1981	Lerata	1	N. Hartley		eBird; Checklist #49329973
14	20 November 1983	5 km east of Garissa	2	D.J. Pearson	adult and juvenile	EABR 1983
15	20 November 1983	5 km east of Garissa	2	D.J. Pearson	adults	EABR 1983
16	12 March 1984	northeast border of Galana Ranch	1	M. Coverdale *et al.*	adult	EABR 1984
17	04 February 1985	Wamba	1	J.H. Fanshawe		eBird; Checklist #48673934
18	late December 1985	Wamba	2	D.A. Turner	adults	EABR 1985
19	25 November 1986	Ngulia Safari Lodge, Tsavo West NP	1	G.C. Backhurst	juvenile	EABR 1986
20	27 November 1988	Baragoi	1	M. Coverdale, D.J. Pearson		EABR 1988
21	24 November 1990	Ngulia Safari Lodge, Tsavo West NP	1	G.C. Backhurst	juvenile	EABR 1990
22	20 March 1990	Kerio Valley	4	D.K. Richards, D.A. Turner	adults with active nests (eggs)	Richards 1992
23	29 June 1991	Shaba NR	1	D.A. Turner	adult	EABR 1991
24	13 November 1991	Ngulia Safari Lodge, Tsavo West NP	1	G.C. Backhurst	adult	EABR 1991
25	07 March 1993	Kerio Valley Fluorspar Mine	1	N. Wilson		Wilson and Wilson 1994
26	25 March 1993	Kerio Valley Fluorspar Mine	1	N. Wilson		Wilson and Wilson 1994

Record no.	Date	Location	Number of birds	Observer(s)	Notes	Reference
27	14 June 1993	Kerio Valley Fluorspar Mine	1	N. Wilson		Wilson and Wilson 1994
28	24 July 1992	Kerio Valley	1	B.W. Finch	adult	Pearson and Turner 1998
29	12 July 1993	Kerio Valley	1	B.W. Finch	adult	Pearson and Turner 1998
30	01 November 1993	Kerio Valley	1	B.W. Finch	adult	Pearson and Turner 1998
31	17 June 1995	Mt Ololokwe	1	L. Lens *et al.*		Lens 1994
32	26 November 1995	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group	adult	Pearson and Turner 1998
33	09 January 1997	Kerio Valley	2	B.W. Finch		B. Finch pers. obs.
34	15 July 1998	Kerio Valley	1	B.W. Finch		B. Finch pers. obs.
35	07 October 2001	Mwea NR	1	M. Coverdale et al.		RSc 2002a
36	25 November 2001	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group	adult	Backhurst & Pearson 2002
37	early September 2002	Mt Ololokwe	2	B. Chege	adults	pers. comm.
38	01 November 2002	Kerio Valley	1	N. Borrow		pers. comm.
39	29 December 2004	Kongelai Escarpment	1	J.E. Bradley, P.N. Bradley	adult	eBird; Checklist #11621656
40	20 January 2005	Kerio Valley	2	B.W. Finch		B. Finch pers. obs.
41	01 January 2006	Lake Baringo	1	S. Easley		pers. comm.
42	20 January 2006	Lake Baringo	2	B.W. Finch		B. Finch pers. obs.
43	26 April 2007	Kerio Valley	1	B.W. Finch		B. Finch pers. obs.
44	05 November 2007	Samburu NR	3	B.W. Finch	adults and a juvenile	B. Finch pers. obs.
45	18 November 2007	Ol Tukai, Amboseli NP	1	B.W. Finch		B. Finch pers. obs.
46	24–27 January 2008	Samburu NR	2	B.W. Finch *et al.*		B. Finch pers. obs.
47	19 April 2009	Kerio Valley	2	B.W. Finch *et al.*	adult	B. Finch pers. obs.
48	11 September 2009	Kerio Valley	2	B. Mugambi *et al.*	adults	RSc 2002b
49	01 November 2009	Kerio Valley	1	B.W. Finch		B. Finch pers. obs.
50	09 January 2010	Kerio Valley	1	B.W. Finch *et al.*	adult	B. Finch pers. obs.
51	22 February 2010	Kerio Valley	2	B.W. Finch		B. Finch pers. obs.
52	20 June 2010	Ol Tukai, Amboseli NP	1	B.W. Finch	adult	B. Finch pers. obs.
53	08 December 2010	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group		G. Backhurst pers. comm.
54	09 December 2010	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group		G. Backhurst pers. comm.
55	22 February 2011	Kerio Valley	5	B.W. Finch		B. Finch pers. obs.

Record no.	Date	Location	Number of birds	Observer(s)	Notes	Reference
56	12 March 2011	Kongelai Escarpment	2	B.W. Finch		B. Finch pers. obs.
57	19 April 2011	Kerio Valley	2	B.W. Finch	adults copulating	B. Finch pers. obs.
58	02 November 2011	Kerio Valley	1	T. Verhulst		eBird; Checklist #63475411
59	18 February 2012	Sagala Lodge	1	P. Steward	photographed	ML #209912071
60	21 March 2012	Kongelai Escarpment	2	B.W. Finch		B. Finch pers. obs.
61	18 April 2012	Kerio Valley	1	B.W. Finch		B. Finch pers. obs.
62	20 November 2012	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group	adult	G. Backhurst pers. comm.
63	16 November 2013	Kerio Valley	2	B.W. Finch		B. Finch pers. obs.
64*	Nov/Dec 2013	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group		D. Turner pers. comm.
65	23 January 2016	Samburu NR	1	R. Vhymeister		eBird; Checklist #27200706
66	19 April 2016	Kerio Valley	1	E. Kistler		eBird; Checklist #29093737
67	17 November 2016	Sagala Lodge	4	T. Pepper	photographed	eBird; Checklist #33136167
68	19 November 2016	Tsavo East NP	4	B. Self, S. Mackintosh		eBird; Checklist #33249793
69	24 November 2016	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group		G. Backhurst pers. comm.
70	05 December 2016	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group	juvenile, photographed	G. Backhurst pers. comm.
71	07 December 2017	Ngulia Safari Lodge, Tsavo West NP	1	Ngulia Ringing Group		G. Backhurst pers. comm.
72	13 April 2017	Shaba NR	1	A. Graham		eBird; Checklist #69407119
73	13 November 2017	Ngulia Safari Lodge, Tsavo West NP	1	A. Fisher		eBird; Checklist #53800537
74	17 November 2017	Ngulia Safari Lodge, Tsavo West NP	1	M. Cade	juvenile, photographed	M. Cade pers. comm.
75	15 January 2018	Mpala Ranch	1	L. Ozsanlav-Harris		eBird; Checklist #53924456
76	06 November 2018	Kerio Valley	2	J.E. Bradley, J.C. Fidorra	adults recorded and photographed	ML #129608041
77	01 January 2019	Lake Baringo	1	A. Newton	photographed	ML #133714431
78	24 January 2019	Marigat-Lake Baringo	1	H. Miller, I. Reid	photographed	ML #140438231
79	21 February 2019	Marigat-Lake Baringo	1	S. Newman	photographed	ML #151154621
80	21 February 2019	Voi	1	M. Ost *et al.*		eBird; Checklist #54293494
81	14 November 2019	Sagala Lodge	1	D. Schaule	juvenile, photographed	ML #193054261
82	18 November 2019	Lake Baringo	1	C. Hesse *et al.*	photographed	ML #189936441
83	2–5 December 2019	Sagala Lodge	2	C. Carter, D. Schaule	juvenile, photographed	ML #194705811
84	22–23 December 2019	Sagala Lodge	1	P. Steward, C. Lamana	juvenile, photographed	ML #208948801

Record no.	Date	Location	Number of birds	Observer(s)	Notes	Reference
85	25 December 2019	Shaba NR	3	M. Grylle		eBird; Checklist #63547467
86	29 January 2020	Lake Baringo	2	K. Valentine *et al.*	photographed	ML #251230091
87	30 January 2020	Marigat-Lake Baringo	1	S. Lefever		eBird; Checklist #64490992
88	9-11 February 2020	Lake Baringo	1	S. Brown *et al.*	photographed	ML #212624081
89	21–25 February 2020	Sagala Lodge	1	D. Schaule		eBird; Checklist #64824700
90	25 February 2020	Kerio Valley	1	J.E. Bradley *et al.*	adult recorded and photographed	ML #211692421
91	25 February 2020	Kongelai Escarpment	1	J.E. Bradley *et al.*	recorded and photographed	ML #211693821
92	26 February 2020	Mt Elgon; Kanyarakwat	2	J.E. Bradley *et al.*	adults carrying nest material, photographed	ML #222976421

Scopus 41(2): 23–31, July 2021

A preliminary account of the forest avifauna of Ihang'ana and Idewa Forest Reserves: 'forest islands' on the Udzungwa Plateau, Tanzania

Chacha Werema, Cosmas Mligo and Henry J. Ndangalasi

Summary

This study reports on the forest avifaunas of Ihang'ana and Idewa Forest Reserves, located on the Udzungwa Plateau, Tanzania, which are undocumented in published literature. Field surveys were conducted between 28 October and 6 November 2020 using the McKinnon species list method. From 185 McKinnon 10-species lists, 40 species were observed in Ihang'ana and 30 in Idewa Forest Reserves, for a combined total of 41 species. Of the species recorded, over 78% (32 species) were forest-dependent birds representative of Eastern Arc Mountains forests. Seven species detected are considered restricted-range species, including Yellow-throated Greenbul *Arizelocichla chlorigula,* which is endemic to the Eastern Arc Mountains of Tanzania. The results suggest that forest birds, including montane species, can survive in isolated areas of suitable habitat even when patch size is small. As such, forests such as Ihang'ana and Idewa forests can still play an important role in the conservation of forest birds.

Keywords: Udzungwa plateau, forests islands, forest birds, conservation

Introduction

Ihang'ana and Idewa Forest Reserves (hereafter, Ihang'ana and Idewa) are situated on the Udzungwa Plateau, within the Udzungwa Mountains in the southern highlands of Tanzania. The Udzungwa Mountains form the southernmost and largest block of the Eastern Arc Mountain chain, which rises from the coastal plain of eastern Tanzania. This mountain chain is comprised of 13 individual mountain blocks that include the Taita Hills (in Kenya), North and South Pare, West and East Usambara, Nguu, Nguru, Ukaguru, Rubeho, Uluguru, Malundwe, Udzungwa and Mahenge (in Tanzania) massifs (Burgess *et al.* 2007). The forests of the Eastern Arc Mountains have been recognized as an Afromontane biodiversity hotspot, being part of the world's 25 biodiversity hotspots (Myers *et al.* 2000). In many places, these forests are now heavily fragmented, and Ihang'ana and Idewa are isolated on the plateau, and no longer connected to the forests found along the main escarpment of the Udzungwas to the east (see Ndangalasi *et al.* 2014).

Avian research in the East Arc Mountains has been extensive. It has included ecological studies such as those of Stuart *et al.* (1987), Romdal & Rahbek (2009) and Werema (2015, 2016), investigating the altitudinal ranges of forest birds, and those of numerous other fieldworkers who have focused on inventorying some of the larger

forest blocks (e.g., Jensen & Brøgger-Jensen 1992, Cordeiro *et al.* 2004, 2006, Fjeldså 1999, Jensen *et al.* 2020). However, the avifauna of many smaller or especially remote forests in the Udzungwa Mountains and Udzungwa plateau, such as Ihang'ana and Idewa, have not been surveyed (e.g., see Cordeiro *et al.* 2004). The condition of the forest at both sites is good and likely to support viable populations of numerous bird species representative of the Eastern Arc Mountains. However, because they exist as forest "islands" in a "sea" of pine plantations, small-scale farms, and settlements, with limited connectivity to larger forests, they are less studied and their usefulness for conservation less well known. As such, an inventory of the species occurring in each forest was required. Avian surveys such as the one reported here may be of use in informing management decisions and in measuring the effectiveness of forest conservation for biodiversity (Bennun & Njoroge 1999).

Materials and methods

Study area

Ihang'ana and Idewa are found in Mufindi District, about 70–75 km east of Mafinga town, and about 22–30 km northwest of the Udzungwa escarpment at Uhafiwa and Ukami villages (Fig. 1). Ihang'ana and Idewa lie between 1800 and 2100 m above sea level. Ihang'ana covers 1207 ha of forest while Idewa has 291 ha of forest (Fig. 1). Currently, the two forests are about 4 km apart, mainly surrounded by pine plantations, and to a lesser extent by croplands and settlements. Of the two forests, Ihang'ana, the larger, is the main catchment and the source of Kihansi River. The two forests are primarily moist with closed canopy, but with some areas of the forest edge having relatively shorter canopies as a result of forest disturbance (Ndangalasi *et al.* 2014). The forest floor is wet and covered with various species of fungi, bryophytes and pteridophytes. The most common tree species in the two forests include *Aphloia theiformis*, *Olea capensis* and *Diospyros whyteana* (Ndangalasi *et al.* 2014).

Survey Methods

Avian species richness was determined using a modified Mackinnon list method (see Fjeldså 1999). This involved slowly walking in the forest while recording birds in lists of 10 species each. Field surveys were conducted between 28 October and 6 November 2020. At 25 pre-planned starting points in both forests, the observers scanned a section of the forest area while recording all the birds seen or heard. Once the first list of 10 species was complete, another list of 10 species was compiled immediately thereafter, and so on. Bird observations were conducted from sunrise to sunset, with brief notes describing unidentified birds or vocalizations, allowing for later adjustments (Fjeldså 1999). In total, 185 10-species lists were compiled: 125 from Ihang'ana and 60 from Idewa.

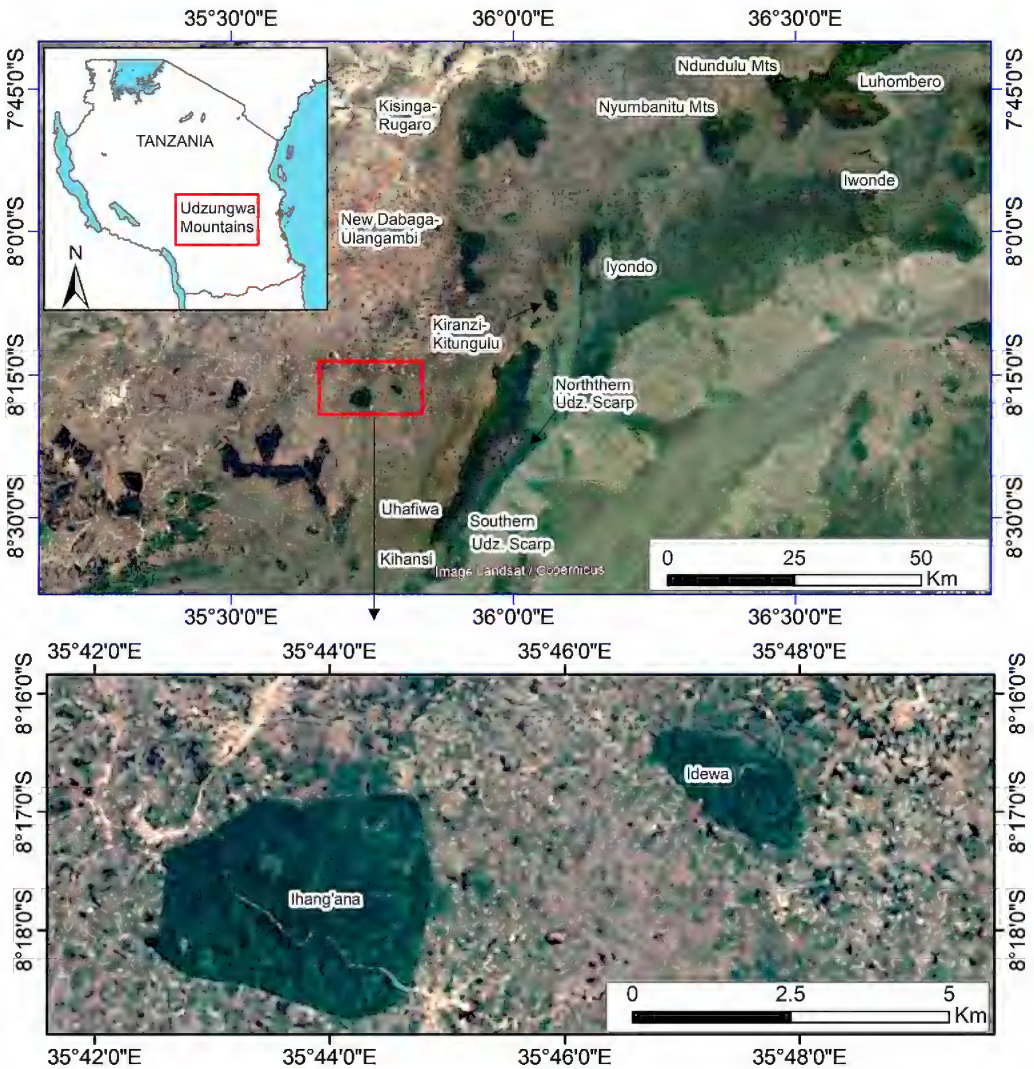

Figure 1. Location of Ihang'ana and Idewa forests on the Udzungwa plateau (Source: Google Earth).

To assess whether sampling effort was adequate, sample-based rarefaction curves were generated using the program PAST (Hammer *et al.* 2001). Observed species were divided into two groups on the basis of forest dependency: forest specialists (*FF* species) and forest generalists (*F* species) following Bennun *et al.* (1996) and Mlingwa *et al.* (2000). *FF* species are birds of the interior undisturbed forest, "true" forest birds which are likely to disappear if the forest is modified to any great extent. *F* species are species of the forest edge that depend upon the forest for some of their resources, and are less affected by forest modification. Furthermore, we followed Jensen *et al.* (2020) in identifying restricted-range montane forest species, which are defined as birds that are limited in range to Eastern Arc forests, as well as those found in only one or two forest areas outside the Eastern Arc Mountains, typically in Tanzania and/or mountain patches in northern Mozambique/Malawi.

The English and scientific names of species follow the IOC world bird list (www.worldbirdnames.org (see Gill *et al.* 2021)).

Results

We recorded 41 species from the two forests. Species accumulation curves for each of the two forests showed a steady increase approaching asymptote, indicating that most of the species expected for each forest were detected (Fig. 2). Of the species we recorded, 51.2% (21 species) were *FF* species and 26.8% (11 species) were *F* species (Appendix 1). Forty-four percent (18 species) of the species observed were montane forest birds of which seven are restricted-range species. These include Dark Batis *Batis crypta*, Fülleborn's Boubou *Laniarius fuelleborni*, Shelley's Greenbul *Arizelocichla masukuensis*, Yellow-throated Greenbul *Arizelocichla chlorigula*, Chapin's Apalis *Apalis chapini*, Kenrick's Starling *Poeoptera kenricki* and Forest Double-collared Sunbird *Cinnyris fuelleborni*. Among the species recorded, only one species, the Mountain Buzzard *Buteo oreophilus*, is Near Threatened (BirdLife International 2016).

Forty and 30 species were recorded in Ihang'ana and Idewa, respectively, and 29 species were shared by the two forests. For the species recorded at Ihang'ana, 21 (52.5%) were *FF* species and 11 (27.5%) were *F* species, while at Idewa, 16 (53.3%) were *FF* species and nine (30%) were*F* species. With the exception of Black Cuckooshrike *Campephaga flava*, all species recorded in Idewa were also found in Ihang'ana.

Six species were common to abundant and were recorded in over half of the McKinnon lists in both forests: Moustached Tinkerbird *Pogoniulus leucomystax*, Fülleborn's Boubou *L. fuelleborni*, White-tailed Crested Flycatcher *Elminia albonotata*, Yellow-throated Greenbul *A. chlorigula*, Southern Yellow White-eye *Zosterops anderssoni*, and White-starred Robin *Pogonocichla stellata* (Appendix 1).

Of the species observed, 17 are known to be altitudinal migrants in the Eastern Arc Mountains (Appendix 1), and some or all individuals of these species may move to lower elevations during the cold season from April to September.

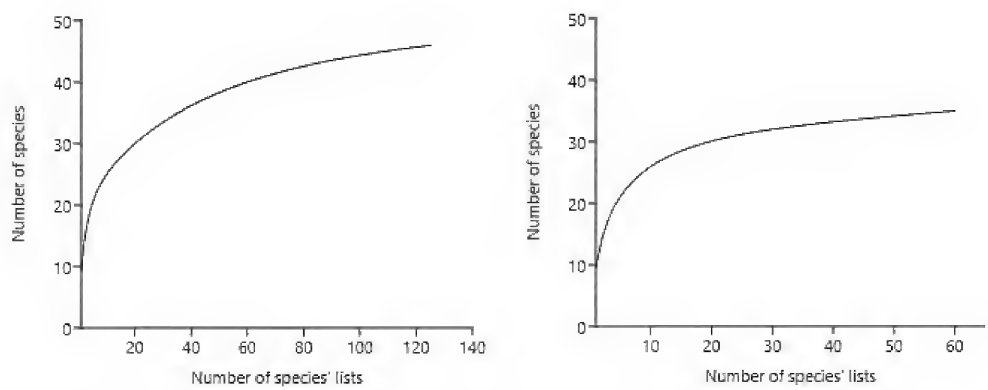

Figure 2. Species accumulation curves for Ihang'ana (left) and Idewa (right) forests.

Discussion

Our investigation of the birds of Ihang'ana and Idewa provides baseline data on the avian assemblage of these two isolated forests on the Udzungwa plateau. The data suggest that these forests, despite their isolation, do support an important representation of forest birds found in the Udzungwa Mountains (see Romdal & Rahbek 2009, Jensen *et al.* 2020), the wider Eastern Arc Mountains and beyond. These include the 17 species which are known to be seasonal altitudinal migrants in the Eastern Arc Mountains (Burgess & Mlingwa 2000, Werema 2015, 2016; Appendix 1) while the remainder have not been documented to make such movements and are assumed to be sedentary residents. As such, despite the past fragmentation, the results suggest that forest birds, including montane species, can survive in small forest patches in fragmented landscapes, as has been demonstrated elsewhere in sub-Saharan Africa (Dowsett-Lemaire 1989, Jensen *et al.* 2020).

Compared with other montane forests of equivalent size, however, the forest bird communities in Ihang'ana and Idewa are somewhat impoverished. For example, Ihang'ana, with 12.06 km^2 of montane forest, had 32 forest species, which is much less than smaller forest patches in the Udzungwa Mountains. For example, Kisinga-Rugaro (9.4 km^2 of closed forest), and Ukami (5 km^2 of closed forest) at similar elevations in the Udzungwa Mountains, support 55 and 58 forest species respectively (Jensen *et al.* 2020). Similarly, Idewa forest (2.91 km^2) is also impoverished in that it supports only 25 forest species in comparison to the smaller-sized, and more isolated Kitemele forest (1.2 km^2 of closed forest in the Udzungwa Mountains), which supports 31 species (Jensen *et al.* 2020).

The avifaunal impoverishment of both Ihang'ana and Idewa was expected because they are both small and isolated forests. This is particularly evident in the relatively small number of montane bird species in comparison to other forests in the Eastern Arc Mountains, and particularly those from the Udzungwa Mountains to the northeast of Ihang'ana and Idewa (see Jensen *et al.* 2021). These results are in line with studies by Newmark (1991) in the Usambara Mountains, Burgess & Mlingwa (1993) in the coastal forests of eastern Africa, and Jensen *et al.* (2020) in the Udzungwa Mountains, showing that smaller forests support depauperate assemblages of species. The fact that some small forests in the Udzungwa Mountains, such as Kiranzi-Kitungulu and Kitemele, support more forest bird species than the relatively larger Ihang'ana forest could possibly be due to more recent separation of these forests from larger forest areas (see Jensen *et al.* 2020).

Of the two forests, Ihang'ana (the larger-sized) had more species than the smaller-sized Idewa and almost all species recorded in the former were a subset of those observed in the latter, except Black Cuckooshrike. However, the two forests had almost equal proportions of forest-dependent species suggesting that both of them are important in conservation of forest birds. Ihang'ana forest, the larger, supported all seven restricted-range species detected, while Idewa forest supported only five, suggesting that the larger forest offers a wider range of habitats, with a slower rate of species extirpation (e.g., see Jensen *et al.* 2020).

The seven restricted-range species recorded in this study are widespread in the forests found in the Udzungwa Mountains, particularly the larger tracts (Jensen *et al.* 2020). They include Yellow-throated Greenbul, which is endemic to Tanzania and was found to be common at both study sites, as was a second species, Fülleborn's Boubou. Chapin's Apalis and Kenrick's Starling, by contrast, were present at low rel-

ative abundances and were only recorded in Ihang'ana. Chapin's Apalis is endemic to the Malawi Rift Mountains and Eastern Arc Mountains north to the Nguru Mountains, and Kenrick's Starling has been considered to be rare and very local in the Kenyan highlands and Eastern Arc Mountains (North Pare, Usambaras, Nguu, Nguru, Uluguru, Udzungwa and Iringa highlands to Mdandu Forest, Njombe; Fjeldså *et al.* 2010).

In conclusion, Ihang'ana and Idewa support a diminished assemblage of forest species typical of the Eastern Arc Mountains. Nevertheless, they still comprise important refuges for a subset of representative species. In comparison to other forests found in the Udzungwa Mountains, some of which are relatively smaller, Ihang'ana and Idewa are impoverished, likely because of a longer period of isolation from larger forest areas. The overall impoverishment of the avifauna in these forests suggests that further reduction of the size would lead to additional local extirpations (Dowsett-Lemaire 1989, Newmark 1991, Dami *et al.* 2013, Jensen *et al.* 2020), and the fact that forest patches that are more isolated support fewer species over time.

Acknowledgements

We wish to thank the Directorate of Research and Publications, University of Dar es Salaam for financial support. The Ministry of Natural Resources and Tourism and Tanzania Forest Services Agency in particular are thanked for granting us permission to work in Ihang'ana and Idewa. We thank the Ward and Village Executive Officers for Kibengu for granting us permission to work in the forests. We are grateful to Maneno Mbilinyi and Maserino Lucius for assistance during fieldwork. We wish to thank Makemie Mabula for having prepared the map of the study area. Lastly, we sincerely thank James Bradley and three anonymous reviewers for constructive comments in the earlier draft of this manuscript.

References

Bennun, L. & Njoroge, P. 1999. Important bird areas in Kenya. Nairobi: East Africa Natural History Society.

Bennun, L., Dranzoa, C. & Pomeroy, D. 1996. The forest birds of Kenya and Uganda. *Journal of East African Natural History* 85(1): 23–48.

Birdlife International. 2016. *Buteo oreophilus*. The IUCN Red List of Threatened Species 2016: e.T22728020A94968444. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22728020A94968444.en. Downloaded on 5 December 2020.

Burgess, N.D. & Mlingwa, C.O.F. 1993. Forest birds of coastal forests in East Africa. *Proceedings VIII. Pan-African Ornithological Congress* 295-301.

Burgess, N.D. & Mlingwa, C.O.F. 2000. Evidence for altitudinal migration of forest birds between montane Eastern Arc and lowland forests in East Africa. *Ostrich* 71(1&2): 184–190.

Burgess, N.D., Butynski, T.M., Cordeiro, N.J., Doggart, N.H., Fjeldså, J., Howell, K.M., Kilahama, F.B., Loader, S.P., Lovett, J.C., Mbilinyi, B., Menegon, M., Moyer, D.C., Nashanda, E., Perkin, A., Rovero, F., Stanley, W.T. & Stuart, S.N. 2007. The biological importance of the Eastern Arc Mountains of Tanzania and Kenya. *Biological Conservation* 134: 209–231.

Cordeiro, N.J., Lovett, J.C., Mulungu, E., Maina, G.G. & Gerstle, J.H. 2006. Initial trends of bird assemblages before and after river diversion in an endemic rich African forest. *Biodiversty and Conservation* 15: 971–983.

Cordeiro, N.J., Mulungu, E., Maina, G.G. & Lovett, J.C. 2004. Birds of Kihansi Gorge, south-eastern Udzungwa Mountains. *Scopus* 24: 11–20.

Dami, F.D., Mwansat, G.S. & Manu, S.A. 2013. The effects of forest fragmentation on species richness on the Obudu Plateau, south-eastern Nigeria. *African Journal of Ecology* 51: 32–36.

Dowsett-Lemaire, F. 1989. Ecological and biogeographical aspects of forest bird communities in Malawi. *Scopus* 13: 1–80.

Fjeldså, J. 1999. The impact of human forest disturbance on the endemic avifauna of the Udzungwa Mountains, Tanzania. *Bird Conservation International* 9: 47–62.

Fjeldså, J., Kiure, J., Doggart, N., Hansen , L.A. & Perkin, A. 2010. Distribution of highland forest birds across a potential dispersal barrier in the Eastern Arc Mountains of Tanzania. *Steenstrupia* 32(1): 1–43.

Gill, F., Donsker, D. & Rasmussen, P. (Eds). 2021. IOC World Bird List (v11.1). doi:10.14344/IOC.ML.11.1.

Hammer, Ø., Harper, D.A.T. & Ryan, P.D. 2001. PAST: Paleontological statistics software package for education and data analysis. *Palaeontologia Electronica* 4(1): 9 pp.

Jensen, F.P. & Brøgger-Jensen, S. 1992. The forest avifauna of the Udzungwa Mountains, Tanzania. *Scopus* 15: 65–83.

Jensen, F.P., Dinesen, L., Hansen, L.A., Moyer, D.C. & Mulungu, E. 2020. Bird species richness in the montane evergreen forests of the Udzungwa Mountains, Tanzania. *Scopus* 40(2): 39–49.

Mlingwa, C.O.F., Waiyaki, E.M., Bennun L.A. & Burgess N.D. 2000. Birds. In N.D. Burgess & G.P. Clarke (eds). *Coastal Forests of Eastern Africa*. Cambridge: IUCN. pp. 149–171.

Myers, N., Mittermeier, C.G., da Fonseca, G.A.B. & Kent, J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858.

Ndangalasi, H.J., Mligo, C. & Mvungi, E. 2014. Composition and size class structure of tree species in Ihang'ana forest reserve, Mufindi District, Tanzania. *Tanzania Journal of Science* 40: 1–12.

Newmark, W.D. 1991. Tropical forest fragmentation and the local extinction of understory birds in the Eastern Usambara Mountains, Tanzania. *Conservation Biology* 5: 67–78.

Romdal, T.S. & Rahbek, C. 2009. Elevational zonation of afrotropical forest bird communities along a homogeneous forest gradient. *Journal of Biogeography* 36: 327–336.

Stuart, S.N., Jensen, F.P. & Brøgger-Jensen, S. 1987. Altitudinal zonation of the avifauna in Mwanihana Forest and Magombera Forests, Eastern Tanzania. *Le Gerfaut* 77: 165–186.

Werema, C. 2015. Seasonal elevational movements of the Little Greenbul *Andropadus virens* in the Uluguru Mountains, Tanzania. *African Journal of Ecology* 53: 253–256.

Werema, C. 2016. Seasonal elevational movements of Eastern Olive Sunbird *Cyanomitra olivacea* in the Uluguru Mountains, Tanzania. *Ostrich* 87(2): 189–192.

Chacha Werema
Department of Zoology and Wildlife Conservation, College of Natural and Applied Sciences, University of Dar es Salaam, P.O. Box 35064, Dar es Salaam, Tanzania. E-mail: cwerema@yahoo.co.uk/cwerema@udsm.ac.tz

Cosmas Mligo
Department of Botany, College of Natural and Applied Sciences, University of Dar es Salaam, P.O. Box 35060, Dar es Salaam, Tanzania

Henry J. Ndangalasi
Department of Botany, College of Natural and Applied Sciences, University of Dar es Salaam, P.O. Box 35060, Dar es Salaam, Tanzania

Scopus 41(2): 23-31, July 2021
Received 2 February 2021

Appendix 1. Birds recorded in Ihang'ana and Idewa forests. FD = Forest dependence categories: FF = forest specialist and F = forest generalist. Montane species are shown in bold. Max. freq. = highest frequency at which a species was recorded in the McKinnon lists in each forest, Ra = Relative abundance. * = altitudinal migrants, and † = restricted-range species. Relative abundance of each species in each forest reserve was calculated by dividing the maximum detections of a species (i.e., the maximum number of McKinnon lists into which a species was recorded) by the total number of McKinnon lists (i.e., 125 in Ihang'ana forest and 60 in Idewa forest). The English and scientific names of species follow Gill et al. (2021).

		Forest Reserve			
		Ihang'ana		Idewa	
Species	FD	Max. freq.	Ra	Max. freq.	Ra
Livingstone's Turaco *Tauraco livingstonii*	F	65	52.00	12	20.00
*Barred Long-tailed Cuckoo *Cercococcyx montanus*	FF	26	20.80	7	11.67
*African Olive Pigeon *Columba arquatrix*	FF	25	20.00	5	8.33
*Lemon Dove *Columba larvata*	FF	34	27.20	0	0.00
Tambourine Dove *Turtur tympanistria*	F	2	1.60	5	8.33
African Goshawk *Accipiter tachiro*	F	7	5.60	8	13.33
Little Sparrowhawk *Accipiter minullus*		1	0.80	0	0.00
Mountain Buzzard *Buteo oreophilus*	FF	2	1.60	3	5.00
Bar-tailed Trogon *Apaloderma vittatum	FF	1	0.80	1	1.67
Crowned Hornbill *Lophoceros alboterminatus*		5	4.00	4	6.67
Moustached Tinkerbird *Pogoniulus leucomystax*	FF	93	74.40	55	91.67
Greater Honeyguide *Indicator indicator*		1	0.80	0	0.00
Olive Woodpecker *Dendropicos griseocephalus	FF	3	2.40	0	0.00
†Dark Batis *Batis crypta*	FF	59	47.20	26	43.33
*Black-fronted Bushshrike *Chlorophoneus nigrifrons*	FF	62	49.60	14	23.33
Black-backed Puffback *Dryoscopus cubla*	F	3	2.40	7	11.67
†Fülleborn's Boubou *Laniarius fuelleborni	FF	66	52.80	46	76.67
Tropical Boubou *Laniarius major*		1	0.80	0	0.00
Black Cuckooshrike *Campephaga flava*		0	0.00	3	5.00
White-tailed Crested Flycatcher *Elminia albonotata	FF	95	76.00	32	53.33
Common Bulbul *Pycnonotus barbatus*		10	6.4	5	8.33
†Shelley's Greenbul *Arizelocichla masukuensis	FF	28	22.40	12	20.00
†Yellow-throated Greenbul *Arizelocichla chlorigula	FF	107	85.60	52	86.67
*Little Greenbul *Eurillas virens*	F	28	22.40	3	5.00
Placid Greenbul *Phyllastrephus placidus*	FF	18	14.40	13	21.67
White-headed Saw-wing *Psalidoprocne albiceps*		2	1.60	0	0.00
*Evergreen Forest Warbler *Bradypterus lopezi*	FF	41	32.80	18	30.00
Cinnamon Bracken Warbler *Bradypterus cinnamomeus*	F	3	2.40	5	8.33
Bar-throated Apalis *Apalis thoracica*	FF	57	45.60	25	41.67
†Chapin's Apalis *Apalis chapini*	FF	7	5.60	0	0.00
Brown-headed Apalis *Apalis alticola*	F	37	29.60	31	51.67
African Hill Babbler *Sylvia abyssinica	FF	32	25.60	14	23.33
Southern Yellow White-eye *Zosterops anderssoni*		63	50.40	34	56.67
Waller's Starling *Onychognathus walleri	FF	6	4.80	0	0.00
†Kenrick's Starling *Poeoptera kenricki	FF	2	1.60	0	0.00

Species	FD	Forest Reserve			
		Ihang'ana		Idewa	
		Max. freq.	Ra	Max. freq.	Ra
African Dusky Flycatcher *Muscicapa adusta*	F	4	3.20	8	13.33
Cape Robin-Chat *Cossypha caffra*		7	5.60	12	20.00
White-starred Robin *Pogonocichla stellata	F	110	88.00	39	65.00
Collared Sunbird *Hedydipna collaris*	F	1	0.80	0	0.00
†Forest Double-collared Sunbird *Cinnyris fuelleborni*	FF	62	49.60	34	56.67
Red-faced Crimsonwing *Cryptospiza reichenovii	F	4	3.20	0	0.00

Short communications

Longevity records of Dark Batis *Batis crypta* and Red-capped Robin-Chat *Cossypha natalensis*, in addition to recapture records of three other forest dependent species from the Udzungwa Mountains, Tanzania

Long-term netting studies using marked birds provide important longevity records, especially for poorly known African forest species (e.g., Mann 1985, Baker & Oatley 2001). Here we report primarily on recaptures of one Red-capped Robin-Chat *Cossypha natalensis* and one Dark Batis *Batis crypta* from the Kihansi Gorge, Udzungwa Mountains, Tanzania. We have sampled the forest birds in this gorge since 1998 (e.g., Cordeiro *et al.* 2004, Werema & Msuya 2019), and two of us have continued this long-term work to date, with intermittent visits every few years as summarized in Werema & Msuya (2019). Furthermore, a short pilot visit prior to this long-term work was conducted in September 1994 by MCR, who captured and ringed birds at two sites in the gorge (Rahner 1995). During this research, we recaptured single individuals of both *C. natalensis* and *B. crypta*, and we provide a summary below for all the recapture events for them.

We also provide recapture records for six other individuals of three species from this gorge (Table 1). The longevity records for these three species (*Eurillas virens, Arizelocichla masukuensis, Cyanomitra olivacea*) are within or lower than those reported for them elsewhere in the region (Mann 1985, Dranzoa 1997, Baker & Oatley 2001). However, we considered it important to report them in this note for those interested in such data. We follow *Birds of the World* (del Hoyo *et al.* 2021) for nomenclature.

The *C. natalensis* was an adult, ringed on 25 February 1999 (ring#: Nairobi A64613), recaptured again about two years later on 13 July 2001 at the exact same location by NJC: the Middle Kihansi at 630 m, in riverine forest that transitioned with lowland forest adjacent to the Kihansi River. CW and CAM recaptured this bird again on 12 September 2008, and for the last time on 6 March 2009 (Table 1). On both occasions the bird was captured in the vicinity of the original location, at 600–650 m. The conservative age from ringing to the last recapture is ten years and ten days.

The *B. crypta* was a male (ring#: Nairobi X98425) recaptured by CW and CAM in the Upper Kihansi at around 800–870 m on 27 November 2009 (Table 1). It was controlled by MCR on 22 September 1994, at 750 m, presumably close to where CW and CAM recaptured it. The conservative age from ringing to the last recapture is 15 years, two months and six days.

Among some of the oldest forest birds in eastern Africa is the record of Dranzoa (1997) of an 18-year-old Rufous Flycatcher-thrush *Neocossyphus fraseri* from Ziika Forest, Uganda, and the record of Plain Greenbul *Eurillas curvirostris* from Kakamega Forest, western Kenya, with a longevity estimate of 19 years and six months (Mann 1985). For the intra-African migrant, *Cossypha natalensis*, the oldest published record is that of Dranzoa (1997) of a seven-year-old individual from Ziika Forest. However, in the database of the South African Ringing Scheme, there is a record of 11 years, 11

months and 27 days (Oschadleus 2019). Our longevity records of about 10 years for this species compares to other members of this genus (Oschadleus 2019), including a Cape Robin-chat *C. caffra* of about 17 years (Paijmans *et al.* 2019) and a White-browed Robin-chat *C. heuglini* of close to 12 years (Paijmans *et al.* 2019, Oschadleus 2019). For *B. crypta*, the longevity record at Kihansi eclipses reports for congenerics, including one of a Cape Batis *B. capensis* male (ssp. *dimorpha*) from Malawi at just over 11 years (Dowsett-Lemaire 2006), and another male *B. capensis* from South Africa at 13 years, one month and nine days (Paijmans *et al.* 2019).

Table 1. Birds ringed in Kihansi Gorge, Udzungwa Mountains, in September 1994 and recaptured between June 1998 and July 2001. *controlled by NJC, **recaptured by CW & CAM with only the last recapture date shown for *Cossypha natalensis*, ***controlled by MR; ^ recaptured by NJC.

Species	Ring #	Date of ringing/elevation (m)	Recapture date/elevation (m)	Elapsed time
Cossyphya natalensis	A64613	25 February 1999/630*	6 March 2009/600-650**	10yr 0mo 6d
Batis crypta	X98429	22 September 1994/750***	27 November 2009/800-870**	15yr 2mo 6d
Eurillas virens	X98429	22 September 1994/750***	8 June 1998/800^	3yr 8mo 18d
Eurillas virens	X98695	16 September 1994/650***	4 June 1998/630^	3yr 8mo 20d
Arizelocichla masukuensis	A59706	21 September 1994/750***	23 Feb 1999/800^	4yr 5mo 3d
Cyanomitra olivacea	N92011	15 September 1994/650***	13 July 2001/630^	6yr 9mo 29d
Cyanomitra olivacea	N92037	22 September 1994/750***	23 February 1999/760^	4yr 5mo 2d
Cyanomitra olivacea	N92044	22 September 1994/750***	13 July 2001/800^	6yr 9mo 22d

Our data, while limited, add more evidence that some African passerines have the potential to live for many years (Peach *et al.* 2001). This applies to forest species, such as *C. natalensis*, that is known for its intra-African and altitudinal migratory behaviour in the Eastern Arc Mountains (Werema 2020), and elsewhere in Africa (Berruti *et al.* 1994, Oatley 2017). It also applies to *Batis* species, such as *B. crypta*, where our record is one of the oldest for the Platysteiridae family in eastern Africa.

References

Baker, L. & Oatley, T. 2001. Forest bird longevities in NW Tanzania. *Afring News* 30: 44.

Berruti, A, Harrison J.A & Navarro, R.A. 1994. Seasonal migration of terrestrial birds along the southern and eastern coasts of southern Africa. *Ostrich* 65: 54–65.

del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds). 2021. *Birds of the World* version 1.0. Ithaca, NY: Cornell Lab of Ornithology. https://doi.org/10.2173.

Cordeiro, N. J., Mulungu, E., Maina, G.G., & Lovett, J.C. 2004. Birds of the Kihansi Gorge, south-eastern Udzungwa Mountains. *Scopus* 24: 11–20.

Dowsett-Lemaire, F. 2006. An annotated list and life history of the birds of Nyika National Park, Malawi-Zambia. *Tauraco Research Report* 8: 1–64.

Dranzoa, C. 1997. The survival of understorey birds in the tropical rainforest of Ziika, Uganda. *Ostrich* 68: 68–71.

Mann, C.F. 1985. An avifaunal study in Kakamega Forest, Kenya, with particular reference to species diversity, weight and moult. *Ostrich* 56: 236–262.

Oatley, T.B. 2017. Altitudinal migration in south-eastern Africa. *Biodiversity Observations* 8: 2–21.

Oschadleus, D. 2019. Longevities of *Cossypha* robin-chats. SAFRING http://thebdi.org/2019/06/07/longevities-of-cossypha-robin-chats/. Posted on 07/06/2019.

Paijmans, D.M., Rose, S. & Oschadleus, D. H. 2019. Using large-scale citizen science ringing data as a means of calculating maximum longevity in birds. *Bothalia–African Biodiversity & Conservation* 49: 1–15.

Peach, W.J., Hanmer, D.B. & Oatley. T.B. 2001. Do South African songbirds live longer than their European counterparts? *Oikos* 93: 235–249.

Rahner, M. 1995. *Survey of avifauna Kihansi Gorge* unpublished report. Dar es Salaam: NORPLAN, TANESCO.

Werema, C. 2020 Seasonal abundance and distribution of Red-capped Robin Chat *Cossypha natalensis* in the Eastern Arc Mountains, Tanzania. *Ostrich* 91: 129–133.

Werema, C. & Msuya, C. 2019. Understorey bird communities 8 and 18 years after river diversion in Kihansi Gorge, Udzungwa Mountains in the Eastern Arc Mountains, Tanzania. *Tanzania Journal of Science* 45: 661-671.

Norbert J. Cordeiro
Department of Biological, Physical and Health Sciences (Mc WB 814), Roosevelt University, 430 S. Michigan Avenue, Chicago, IL 60605, USA & Science and Education, The Field Museum, 1400 South Lake Shore Drive, Chicago, Illinois 60605, USA. Email: ncordeiro@fieldmuseum.org

Chacha Werema
Department of Zoology and Wildlife Conservation, College of Natural and Applied Sciences, University of Dar es Salaam, P.O. Box 35064, Dar es Salaam, Tanzania. Email: cwerema@udsm.ac.tz

Marcel Rahner
Zoological Museum, Universitetsparken 15, DK-2100, Copenhagen, Denmark. Email: mcr@email.dk

Charles A. Msuya
Department of Zoology and Wildlife Conservation, College of Natural and Applied Sciences, University of Dar es Salaam, P.O. Box 35064, Dar es Salaam, Tanzania. Email: cmsuya@uccmail.com

Scopus 41(2): 32-34, July 2021
Received 15 April 2021

Counts of Madagascar Pratincole *Glareola ocularis* from Bagamoyo, Tanzania, and confirmation of an important non-breeding site on the lower reaches of the Ruvu River

The Madagascar Pratincole *Glareola ocularis* is the rarest of the eight species in the genus with population estimates varying between 5000 and 10000 individuals (Delany & Scott 2006). The population is said to be declining with increasing threats on the breeding grounds along the east and north coasts of Madagascar where it occurs in small colonies. It is poorly known during the breeding season which is between October and December, peaking in November. It is assumed that the entire population winters along the coast of East Africa, in Kenya and Somalia in particular. There are only scattered records from islands in the Malagasy region (Safford 2013), while Britton (1980) gives the following summary for East Africa (references to Tanzanian sites in bold):

> *"A Malagasy migrant which winters in dunes north of Malindi, especially at Sabaki where 800 or more are counted regularly between April and late September. Passage birds swell the numbers to thousands in August and early September, and it occurs in smaller numbers on passage elsewhere on the coast from* ***Mikindani*** *to Lamu, mainly in September. Sabaki counts seldom exceed 2500, and 9000 or more on 17 August 1978 is unprecedented. Hundreds at Kendu Bay on Lake Victoria on 21–22 August 1920, six at* ***Sinya*** *in* ***N Tanzania*** *on 23 May 1973, three at* ***Kidugallo*** *in* ***E Tanzania*** *on 25 September 1952, and regular small flocks at Garsen and inland sites near Malindi are the only records away from the coast."*

While the date is appropriate, the 1920 record for Lake Victoria has been questioned (Zimmerman *et al.* 1996), although there is a recent record of five birds photographed at Bologonga, Serengeti NP on 23 June 2019 (C. Shipper, pers. comm.), that confirms some wandering of this species west of the Rift Valley. Meanwhile, Harvey (1973, 1974) provides a series of records for Dar es Salaam, Tanzania: 1) eight on 7 April and 60 on 12 April 1971, 2) two on 14 April and four on 22 April 1973, and 3) two on 20 August and six on 28 August 1973. Baker & Baker (2002) provide two additional records for Dar es Salaam: 2000 birds in March 1982 over Jangwani Salt Pans and 72 birds in September 1992 from the same site.

Ad hoc records in the literature suggest that the lower reaches of the Ruvu River and its small delta might be important for the Madagascar Pratincole. However, during the compilation of records for the Important Bird Areas of Tanzania (Baker & Baker 2002) there were insufficient data to include this site. During a period of regular visits to Dar es Salaam since, a concerted effort was made by the author and other birdwatchers based in Dar es Salaam to count waders and other waterbirds at this location, especially when high tides forced birds to roost in the adjacent salt works. This note presents count data collected on several repeat visits to the site from August 2011 to May 2016, together with a literature review for context. The Bagamoyo Saltworks is mentioned in Safford (2013) as N.E. Baker (pers. comm.), and this note serves to formally add these more recent records to the literature.

The records (Table 1; from data archived for the Tanzania Bird Atlas) were made at Bagamoyo, 60 km north of Dar es Salaam, where the species congregates at high tides to roost on the bunds in the Stanley Salt Works (6°25′14″ S, 38°53′37″ E). Earliest and latest dates of occurrence were found to be 2 April and 17 September, and the higher counts coincided with periods of high tide as expected (though visits were not always specifically timed to high tides).

Table 1. Survey counts of Madagascar Pratincole *Glareola ocularis* at the Bagamoyo Salt Works on the Ruvu River, northeast Tanzania, from August 2011 to May 2016. Bold indicates counts exceeding the estimated 1% global Important Bird Area (IBA) population threshold limit. *Half of this total counted at the Ruvu River causeway 12 km from Bagamoyo.

Date	Count
2 August 2011	627
4 September 2011	90
3 June 2012	59
16 June 2013	200
20 April 2014	3
25 May 2014	27
1 June 2014	48
15 June 2014	86
6 July 2014	88
2 April 2015	12
24 May 2015	60
27 May 2015	40*
14 June 2015	141
5 July 2015	115
11 July 2015	81
6 September 2015	16
15 May 2016	2

Madagascar Pratincoles occur widely and breed in small colonies while in Madagascar, and therefore accurate population estimates are difficult (Safford 2013). Delany *et al.* (2009) provide a global population estimate of 5000 to 10 000 birds with a 1% threshold of 75 birds and a decreasing population. Mundkur & Nagy (2012) provide a similar estimate of 5000 to 10 000 birds with a 1% threshold of 70 birds. The only key site for Tanzania identified by Delany *et al.* (2009) is the salt pans at Jangwani, based on the record of 2000 passage birds in March 1982 (Baker & Baker 2002). However, despite regular visits to Jangwani by local Dar es Salaam birdwatchers this is the only significant count from this site and it may not be as important for this species as initially perceived. By contrast, the maximum count of 627 birds at Bagamoyo is close to 10% of the estimated global population, and to date, eight counts have exceeded the 1% threshold required to designate this location as a shadow Ramsar site.

Clearly, the Bagamoyo salt works and adjacent areas on the lower Ruvu River support important non-breeding and passage habitat for this species, and may be considered a regular non-breeding site. It provides a safe roost for birds seeking to feed over the nearby Ruvu Estuary and the floodplain of the Ruvu River, and this wider area may support additional non-breeding Madagascar Pratincoles (although access difficulties have prevented surveys to date). Regular visits to the salt pans on the southern bank of the nearby Wami River and the huge salt pans in Saadani NP may also increase our knowledge of this species on the north Tanzania coast.

Acknowledgements

Jude Jarvis, Riaan Marais and Jez Simms are thanked for assistance in the field. The management of H.J. Stanley& Sons are thanked for open access to their salt works on the northern edge of Bagamoyo.

References

Baker, N.E. & Baker, E.M. 2002. *Important Bird Areas in Tanzania: A first inventory.* Dar es Salaam: Wildlife Conservation Society of Tanzania.

Britton, P.L. (ed). 1980. *Birds of East Africa.* Nairobi: East Africa Natural History Society.

Delany, S. & Scott, D. (eds). 2006. Waterbird Population Estimates Fourth Edition. Wageningen, The Netherlands: Wetlands International.

Delany, S., Scott, D., Dodman, T. & Stoud, D. (eds). 2009. *An Atlas of wader populations in Africa and western Eurasia*. Wageningen, The Netherlands: Wetlands International.

Harvey, W.G. 1973. The Madagascar Pratincole *Glareola ocularis* in Tanzania. *EANHS Bulletin* 1973: 115–116.

Harvey, W.G. 1974. Further records of Madagascar Pratincoles *Glareola ocularis* near Dar es Salaam. *EANHS Bulletin* 1974: 71–72.

Mundkur, T. & Nagy, S. (eds). 2012. *Waterbird Population Estimates* 5th edition. Wageningen, The Netherlands: Wetlands International.

Safford, R.J. 2013. Madagascar Pratincole *Glareola ocularis* pp 387–389 in Safford, R.J. & Hawkins, A.F.A. (eds). 2013. *The Birds of Africa. Vol. VIII: The Malagasy Region*. London: Christopher Helm.

Zimmerman, D.A., Turner, D.A. & Pearson, D.J. 1996. *Birds of Kenya and Northern Tanzania*. London: A&C Black.

Neil E. Baker
P.O. Box 396, Iringa, Tanzania. Email: tzbirdatlas@yahoo.co.uk

Scopus 41(2): 35-37, July 2021
Received 5 April 2021

Iris colour changes and behaviour in the Three-streaked Tchagra *Tchagra jamesi:* an observation from the past

The African bush-shrikes (Malaconotidae) are one of the bird families in which a significant number of species have a distinctively coloured iris (Craig & Hulley 2004). However, in this review paper we overlooked both the description of the Three-streaked Tchagra *Tchagra jamesi* in two standard handbooks (Archer & Godman 1961, Pearson 2000), and some published observations by a well-known East African ornithologist, V.G.L. van Someren. Changes in pupil size, or in iris coloration, seem to be close-range signals which are not often obvious to a human spectator—they are presumably directed at conspecific birds who are likely to be less than 1 m away. Some instances have thus been reported by bird-ringers with the bird in the hand (e.g., Black-bellied Starling *Notopholia corusca*, McCulloch 1963, Britton & Britton 1970). However, keen observers and especially photographers may be alert to such subtle changes in appearance.

In a long paper dealing with taxonomy and distribution, with only a scattering of other biological information, van Someren (1922, pg. 113) wrote of the Three-streaked Tchagra: "*The peculiar spotted iris is remarkable, the size of the spots varying with the state of excitability of the bird, being large when the bird is excited, and contracting to mere pinpoints when frightened.*" He provided no further details of the circumstances in which this was observed, but his publications included photos of many bird species taken from hides.

Coloured flecks in the iris of other species have been attributed to sex differences (e.g., African Black Oystercatcher *Haematopus moquini*, Kohler *et al.* 2009) or possibly to age and breeding condition (e.g., Common Myna *Acridotheres tristis*, Feare *et al.* 2015), but there have been no reports of short-term changes in appearance. So here is a new challenge for birders and particularly photographers: what is happening at eye-level when birds are interacting?

The accompanying photograph, taken by the Ngulia Ringing Group of a bird in the hand, vividly illustrates the spots in the iris (Fig. 1). Clearly the bird was under stress in this situation—it would be interesting to know if the eye facing away from the photographer showed the same pattern, as I have seen an asymmetrical response in the eyes of a Black-bellied Starling in this situation.

Figure 1. Three-streaked Tchagra *Tchagra jamesi* in the hand, showing distinctive spots in the iris (photo courtesy of the Ngulia Ringing Group).

Acknowledgements

Don Turner alerted me to the reference in Archer & Godman 1961, to which I do not have access and Graeme Backhurst generously made available the photograph of the bird in the hand; my sincere thanks to them both.

References

Archer, G. & Godman, E. 1961. Three-streaked Tchagra pp. 1353–1356 in *The Birds of British Somaliland and the Gulf of Aden.* Vol. 4. Edinburgh & London: Oliver & Boyd.

Britton, P.L. & Britton H. 1970. Eye colour of the Black-bellied Glossy Starling. *EANHS Bulletin* November 1970: 46.

Craig, A.J.F.K. & Hulley, P.E. 2004. Iris colour in passerine birds: why be bright-eyed? *South African Journal of Science* 100: 584–588.

Feare, C.J., Edwards, H., Taylor, J.A., Greenwell, P., Larose, C.S., Mokhoko, E. & Dine, M. 2015. Stars in their eyes: iris colour and pattern in Common Mynas *Acridotheres tristis* on Denis and North Islands, Seychelles. *Bulletin of the British Ornithologists' Club* 135: 61–68.

Kohler, S., Bonnevie, B. & Dano, S. 2009. Can eyeflecks be used to sex African Black Oystercatchers *Haematopus moquini* in the field? *Ostrich* 80: 109–110.

McCulloch, D. 1963. Colour change in the iris of the Black-bellied Starling *Lamprotornis corruscus. Ostrich* 14: 177.

Pearson. D. 2000. Three-streaked Tchagra, pp. 424–425 *in* Fry, C.H., Keith, S. & Urban, E.K. (eds). *The birds of Africa.* Vol. VI. London: Academic Press.

van Someren, V.G.L. 1922. Notes on the birds of East Africa. *Novitates Zoologicae* 29: 1–246.

Adrian J.F.K. Craig
Department of Zoology & Entomology, Rhodes University, Makhanda, 6140, South Africa. Email: a.craig@ru.ac.za

Scopus 41(2): 38-39, July 2021
Received 5 February 2021

East African Rarities Committee Report for 2020

The East African Rarities Committee assesses records of new and very rare birds occurring in Kenya, Tanzania, Uganda, Rwanda and Burundi. This includes up to the fifth record of any species from each of the five countries. Membership of the committee in 2020 comprised David Fisher (Chairman), Neil Baker, Nik Borrow, Brian Finch, Colin Jackson, Johnnie Kamugisha, David Moyer, Nigel Redman, Itai Shanni, Roger Skeen, Terry Stevenson, Don Turner and Washington Wachira. During 2020, the committee assessed records of 22 taxa, of which 15 species and three subspecies were unanimously accepted. Two records were rejected and two other records have been put on hold requiring further investigation.

Sightings of species for which there are fewer than five records for a country should be submitted to the EARC Secretary, Nigel Hunter, P.O. Box 24803, Karen 00502, Nairobi, Kenya; Email: nigelhunter74@gmail.com. Lists of species with fewer than five records for each country and the EARC rarity form are available as downloads from the EARC website (www.eararities.org). Please contact the Secretary to obtain clarification of whether a record requires a submission and for guidance on what details to include in the submission. Past records of rare species are also sought in order to bring the EARC database up to date. Nomenclature follows the *Checklist of the Birds of Kenya* 5th edition (Bird Committee 2019) unless stated otherwise.

On a more somber note, and with great sadness, we mark the passing of EARC Chairman David Fisher on 22 May 2021. David was instrumental in establishing the EARC, and enjoyed a lengthy career sharing his passion for birds with other ornithologists and birders around the world. His collection of bird recordings at the British Library of Sound is widely renowned, and East Africa always held a special place in David's heart. He will be sorely missed by many.

A. Species accepted

Pacific Golden Plover *Pluvialis fulva*

Fifth record for Uganda. Four birds seen and photographed at Queen Elizabeth National Park (Kasenyi track) on 28 November 2019 (J. Meyrav, P. Nanyombi, A. Boon, R. Trigou, A. Sebastian and D. Calderon).

Grey Plover *Pluvialis squatarola*

Fourth record for Rwanda. A single bird was seen and photographed at Lake Hago, Akagera National Park on 20 November 2016 (M. Ortner). Submitted by Gaël Vande weghe.

Pectoral Sandpiper *Calidris melanotos*

First record for Uganda. A single bird seen and photographed at Uganda Wildlife Education Centre, Entebbe on 6 and 7 December 2019 (Fig. 1; J. Meyrav and C. Finger).

Figure 1. Pectoral Sandpiper *Calidris melanotus* (photo: Jonathan Meyrav).

Figure 2. Black-rumped Waxbill *Estrilda troglodytes* (photo: Rita Souza).

Long-tailed Skua *Stercorarius longicaudus*

Third record for Kenya. A single bird seen and photographed offshore from Watamu village, Kilifi County on 19 May 2020 (C. Jackson and R. Nussbaumer).

Fan-tailed Raven *Corvus rhipidurus*

First record for Rwanda. A single bird was seen and photographed near a local market, Musanze Town, Musanze District from 12 July 2020 and still present as of 2 August 2020 (J. Dufitumukiza, O. Rukundo and twelve other observers).

Golden-naped Weaver *Ploceus aureonucha*

Second substantiated record for Uganda and the East African region. Two birds seen and photographed at Semliki National Park on 14 January 2020 (Fig. 3 & 4; C. Kwesiga and J. Selby). More detailed information in regard to this record can be found in Selby *et al.* (2021).

Figures 3 and 4. Golden-naped Weaver *Ploceus aureonucha* (photos: Jake Selby).

Black-rumped Waxbill *Estrilda troglodytes*

Third record for Tanzania. Five birds were seen and photographed at Speke Bay Lodge, Lamadai, Lake Victoria on 30 December 2012 (Fig. 2; R. Souza, C. Schipper, F. Olmos and E. Rottenberg).

Eastern Paradise Whydah ***Vidua paradisaea***

Fourth record for Rwanda. A single male seen and photographed at Gasumbashyamba, Akagera National Park on 9 January 2020 (G. Vande weghe).

White Wagtail ***Motacilla alba***

Third record for Rwanda. A single bird seen and photographed at Lake Nyirakigugu on 18 January 2019 (E. Kayiranga). Submitted by Gaël Vande weghe.

Dusky Lark ***Pinarocorys nigricans***

Second record for Rwanda. A single bird was seen and photographed at Uwasenkoko Swamp, Nyungwe National Park on 26 June 2019 (A. Scott Kennedy, G. Vande weghe and P. Holmen).

South African Cliff Swallow ***Petrochelidon spilodera***

Third record for Kenya. A single bird seen and photographed at Aruba Lodge, Tsavo East National Park on 6 July 2020 (Fig. 5; R. Nussbaumer, A. Nussbaumer and M. Djambi).

Figure 5. South African Cliff Swallow *Petrochelidon spilodera* (photo: Raphaël Nussbaumer).

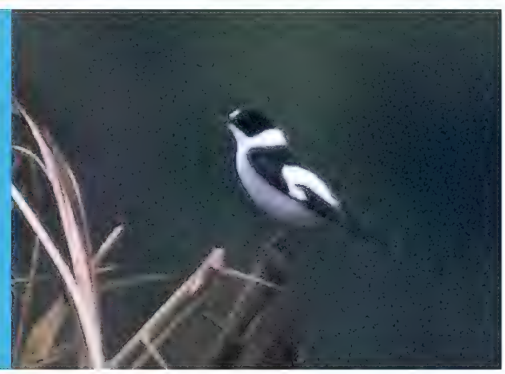

Figure 6. Collared Flycatcher *Ficedula albicollis* (photo: Richard Webber).

Ethiopian Swallow ***Hirundo aethiopica***

First substantiated record for Tanzania. At least two birds were seen and photographed on the electricity line on the Fish Eagle Point Road, Mkinga, north of Tanga on 6 June 2020 (T. Schoch). For further background to this species' rarity status see Baker (2020).

Collared Flycatcher ***Ficedula albicollis***

Fourth record for Uganda. A single male seen and photographed at Bigodi Swamp, Uganda on 11 March 2018 (Fig. 6; J. Webber, R. Webber, C. Webber, B. Webber, J. Mirembe and D. Mirembe).

Common Rock Thrush ***Monticola saxatilis***

Second record for Rwanda. A single bird seen and photographed at Rwisirabo, Akagera National Park on 30 November 2019 (G. Vande weghe).

Capped Wheatear ***Oenanthe pileata***

Second record for Uganda. A single bird seen and photographed at Kasenye Lake Retreat, Lake George shoreline (Kasese District) on 10 November 2020 (D. Yekutiel).

B. Subspecies accepted

Bare-faced Go-away-bird *Corythaixoides personatus personatus*

Third record for Kenya of the nominate subspecies (which is sometimes considered to be a separate species: Brown-faced Go-away-bird). Eight birds seen together with photographic evidence obtained plus two more birds heard nearby on 21 August 2020 near Uran village, close to the Ethiopian border, about 50 km west of Moyale (T. Stevenson, J. Macleod, A. Roberts and C. Roberts).

Golden-tailed Woodpecker *Campethera abingoni suahelica*

First documented record from Taveta (overlooked specimen—located in the Academy of Natural Sciences, Philadelphia, #95335), and second documented record (photo: B. Finch 2020, see Fig. 7) from Nairobi of *C. s. suahelica* as the subspecies occurring east of the Rift Valley in Kenya. Scattered records between these two locations are therefore presumed to be this subspecies.

Red-rumped Swallow *Cecropis daurica rufula*

Fourth record for Kenya. A single bird was mist-netted and photographed at Ngulia Safari Lodge, Tsavo West National Park on 18 November 2019 (M. Cade, P. Jones, I. Kirton and C. Jackson).

Figure 7. Golden-tailed Woodpecker *Campethera abingoni suahelica* (photo: Brian Finch).

C. Species rejected

The following records were rejected because the details provided were insufficient to establish the identification with certainty:

Red Knot *Calidris canutus* at Kazinga Channel, Queen Elizabeth National Park, Uganda on 11 October 2019.

Green-throated Sunbird *Chalcomitra rubescens* at forest edge, Ruhondo wetland, Rwanda on 4 July 2016.

References

Baker N.E. 2020. Does the Ethiopian Swallow *Hirundo aethiopica* occur in Tanzania? *Scopus* 40(2): 84–87.

Bird Committee, Nature Kenya. 2019. *Checklist of the Birds of Kenya.* Fifth Edition. Nairobi: Nature Kenya (EANHS).

Selby, J., Kwesiga, C. & Fishpool, L.D.C. 2021. Golden-naped Weaver *Ploceus aureonucha*: Second record for Uganda and first field photographs. *Bulletin of the African Bird Club* 28(1): 68-70.

Nigel Hunter
P.O. Box 24803, Karen 00502, Nairobi, Kenya. Email: nigelhunter74@gmail.com

SCOPUS: Journal of East African Ornithology

Scopus: Journal of East African Ornithology has been published since 1977 by the Bird Committee of the East Africa Natural History Society. Originally titled *Scopus*, the addition of *Journal of East African Ornithology* began with our January 2018 issue. The journal is published Open Access twice a year, typically in January and July. Recent issues (from 2008) can be found on African Journals Online. Older issues and Special Supplements are available on Biodiversity Heritage Library. For further information about *Scopus: Journal of East African Ornithology*, contact Nature Kenya P.O. Box 44486, G.P.O. 00100, Nairobi, Kenya, tel. +254 20 3749957, Email: scopus@naturekenya.org or visit our website: naturekenya.org/publications/scopus.

Cover illustration from a gouache painting by P.A. Clancey

Instructions for contributors

Scopus: Journal of East African Ornithology welcomes original contributions — which have not been published elsewhere — on all aspects of the ornithology of eastern Africa, encompassing the area from Sudan, Ethiopia and the Horn of Africa countries south to Mozambique, and including the Malagasy region.

Contributions comprise original (full) papers, short communications (normally under two pages in length, including short notes and records) and letters. Original articles and short communications should present some new findings that have not been published or been submitted for publication elsewhere. All submissions are subject to peer review. They will be assessed by at least one member of the editorial board as well as by independent referees.

The text must be written in (British) English following the preferred (first) spelling of the *Oxford dictionary of English*, Third edition, 2010, or later. Please type nothing in all capital letters unless the word is always spelled that way, e.g., 'UK'. Please include between four and six keywords for full papers, only. When preparing your manuscript, please follow the conventions used in *Scopus* and refer to a recent issue (volume 34 onwards) for guidance. Some examples of conventions are:

Papers: Title, authors' names, Summary or Abstract, body of the paper with any desired sub-headings, Acknowledgements (if any), References, names and addresses of the authors, Appendices (if any).

Short notes: Title, text (no Summary required), Acknolwedgements (if any), References, names and addresses of the authors.

Units: Metric units and their SI equivalents and abbreviations should be used. The

abbreviation should be preceded by a space, '5 km' not '5km'. Latitudes and longitudes in degrees and minutes, not decimal degrees.

Dates: 21 February 2001 [note the order, no comma, not 21st].

Time of day: 13:00 [note colon, no 'hours', 'hrs' or 'h'; 'h' is a unit of time, not of time of day].

Names of birds: For example, African Thrush *Turdus pelios* [no comma, no parentheses, no author's name or date (unless pertinent to a point in the text)].

References cited in the text: Cite multiple references in chronological order, separated by commas, e.g. (Njoroge & Launay 1998, Mlingwa *et al.* 2001) [note ampersand, italicized '*et al.*', no comma between authors' names and date].

List references at the end of an article: See the examples below for format. When printed, authors' names appear in capitals and small capitals *but they should be typed in ordinary roman as shown below.*

Give names of journals in full. (For books, after author(s), year of publication and title, give town followed by the publisher.) Examples:

Cordeiro, N.J. & Githiru, M. 2000. Conservation evaluation for birds of *Brachylaena* woodland and mixed dry forest in northeast Tanzania. *Bird Conservation International* 10: 47–65.

Stuart, S.N., Jensen, F.P., Brøgger-Jensen, S. & Miller, R.I. 1993. The zoogeography of the montane forest avifauna of eastern Tanzania pp. 203–228 *in* Lovett, J.C. & Wasser, S.K. (eds) *Biogeography and ecology of the rainforests of Eastern Africa*. Cambridge: Cambridge University Press.

Urban, E.K., Fry, C.H. & Keith, S. (eds) 1986. *The birds of Africa*. Vol. 2. London: Academic Press.

BirdLife International 2013. Species factsheet: *Balearica regulorum*. Downloaded from http://www:birdlife.org on 14/05/2013.

Both English and scientific names of birds should be given when the species is first mentioned — in the title and in the text — thereafter only one name should be used but both English and scientific names should be given in captions to figures.

Bird names should be those of a stated work. Any deviations from this work should be noted and the reasons given.

Black-and-white or colour photographs and line illustrations should be provided as separate graphic files in JPEG or TIFF format. All articles should be submitted by email in Microsoft Word or as a Rich Text Format (RTF) file.

Please send all contributions to
The Editor, *Scopus: Journal of East African Ornithology*, Email:
scopus@naturekenya.org

Rare birds in East Africa

Records of rare birds from Kenya, Tanzania and Uganda are assessed by the East Africa Rarities Committee. Records from other countries in the region can also be submitted for review and possible publication in *Scopus*. A full account of the record should be sent to the committee Chairman, Nigel Hunter (nigelhunter74@gmail.com) and the *Scopus* editor.

The East Africa Natural History Society

Nature Kenya, P.O. Box 44486, 00100, Nairobi, Kenya; tel. +254 (0) 2 3749957/3746090; email: office@naturekenya.org

Nature Uganda, P.O. Box 27034, Kampala, Uganda; tel. +256 (0) 41 540 719, fax 533528; email: eanhs@imul.com

National Bird Mapping Projects

Kenya Bird Map
kenyabirdmap.adu.org.za

Tanzania Bird Atlas
tanzaniabirdatlas.com